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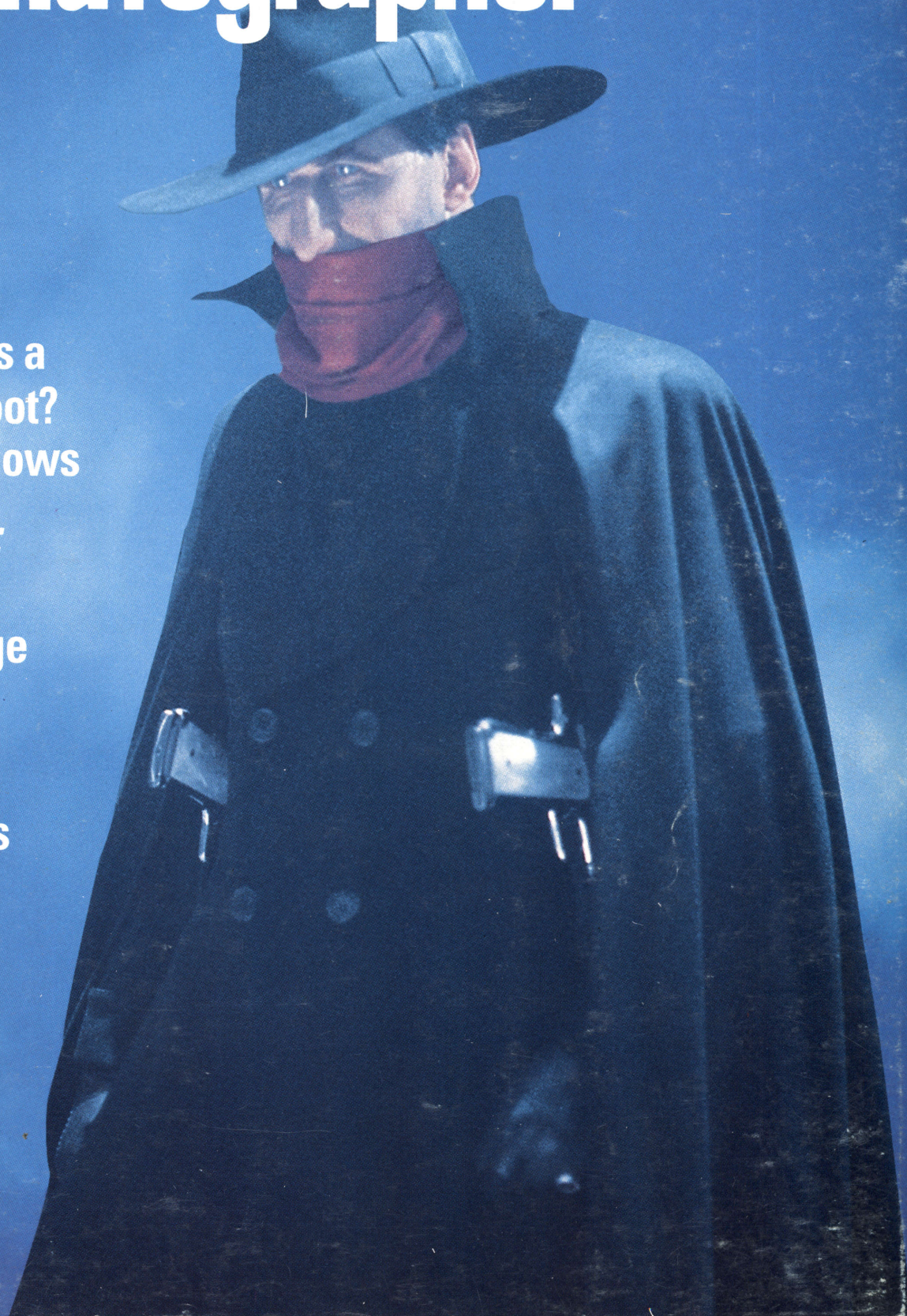

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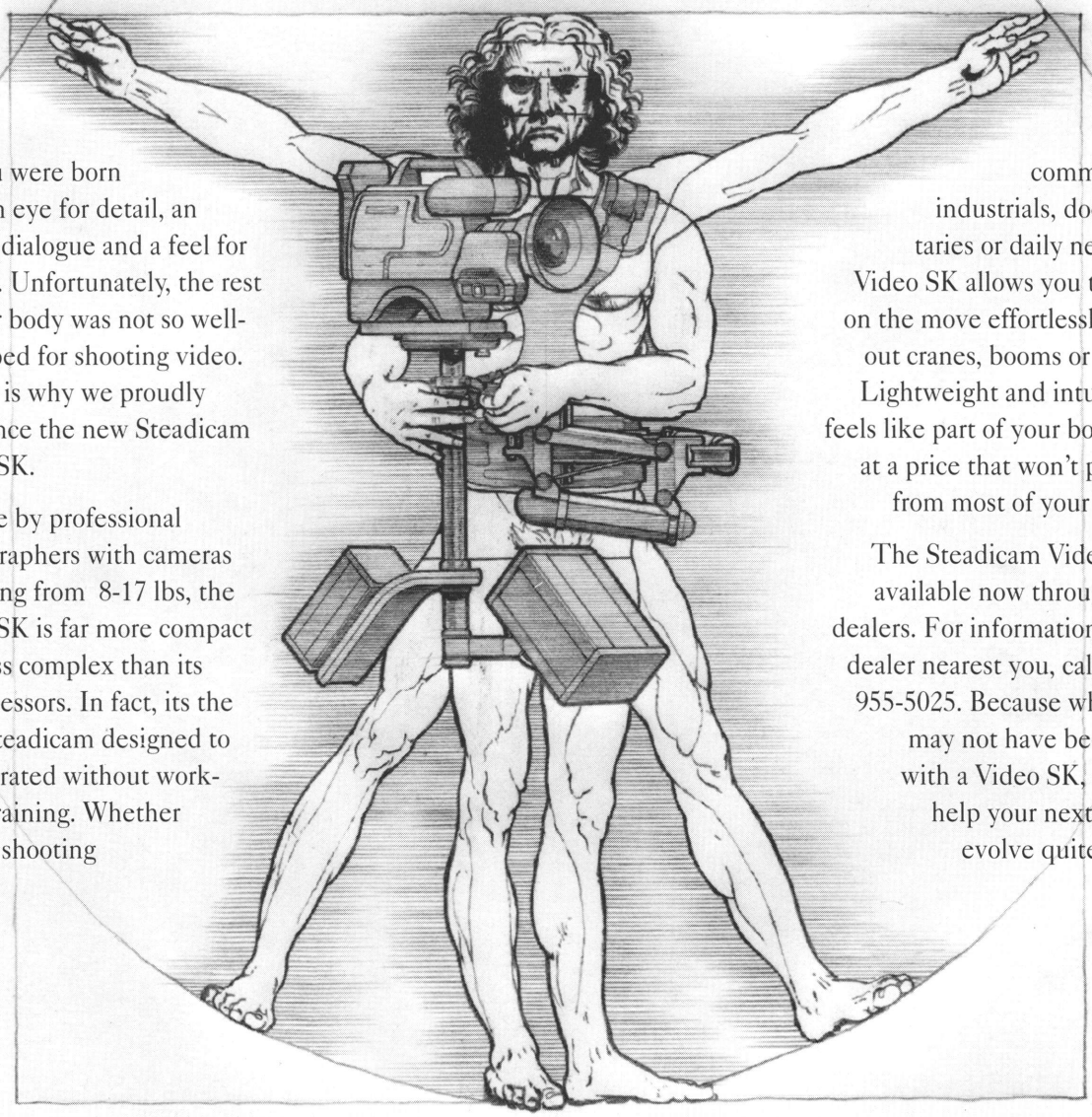

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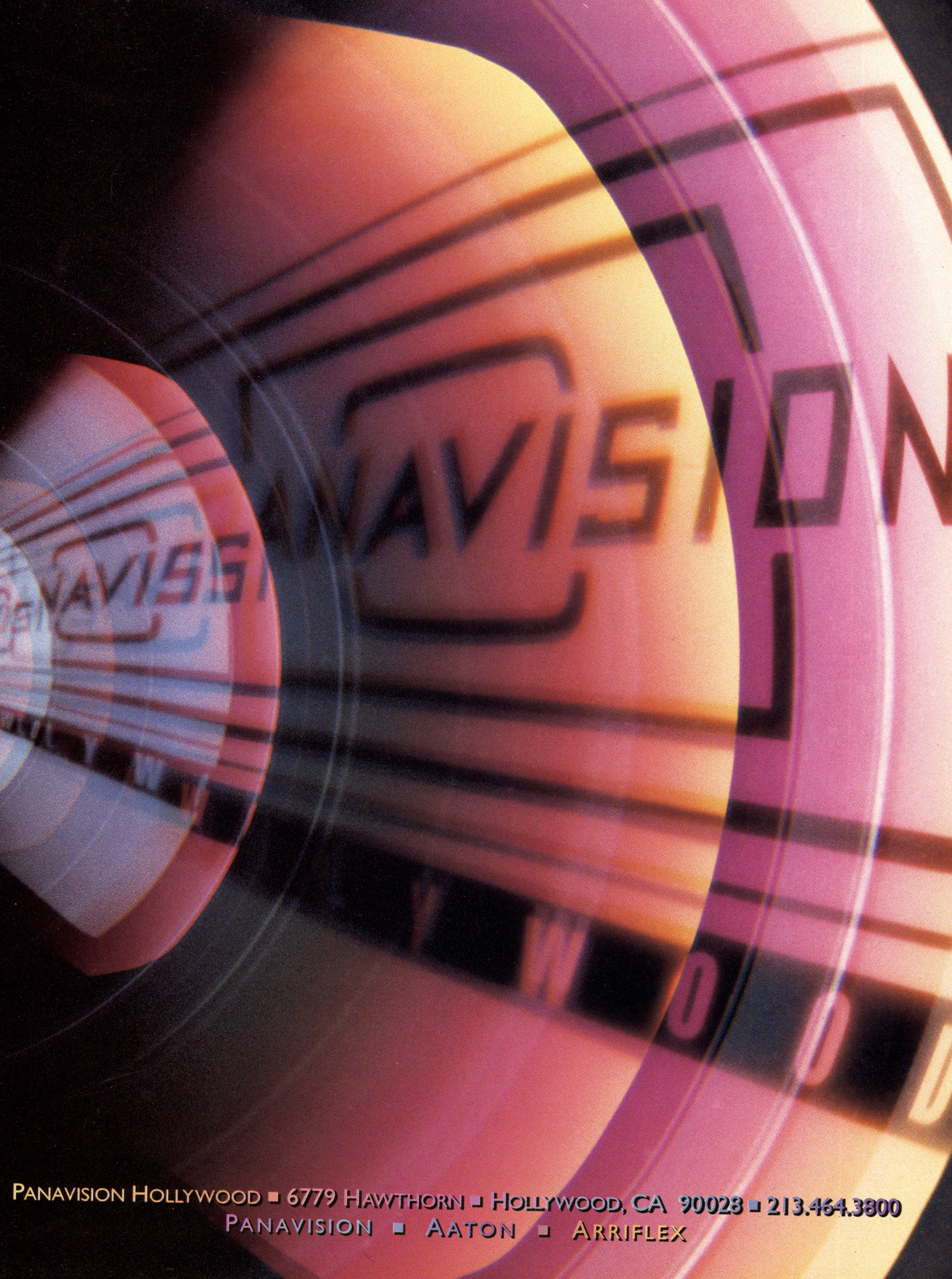

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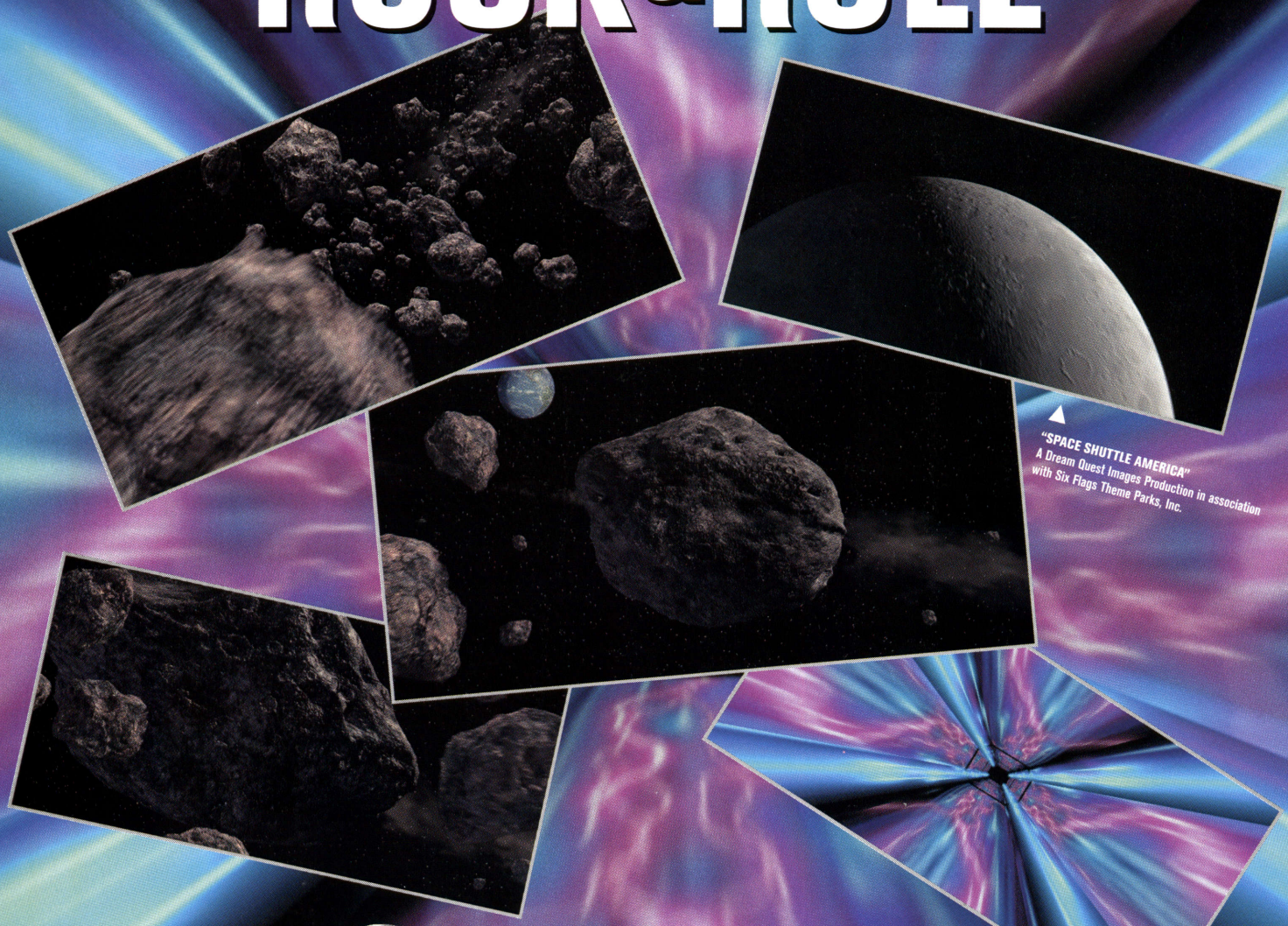

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Directed by Mike Shea, Space Shuttle America marks the FIRST TIME that a PERSONAL COMPUTER-BASED RENDERING AND ANIMATION PACKAGE was used to create A MOTION PICTURE RESOLUTION THEME PARK RIDE. Digital Effects Supervisor Tim Landry and his team at Dream Quest worked with a beta version of ELECTRICIMAGE ANIMATION SYSTEM 2.0 to create the asteroid field, hyperdrive effect, space debris and moon approach, as well as all of the star fields in the ride. MOTION CONTROL MODEL PHOTOGRAPHY of moonbase and structural elements was SEAMLESSLY INTEGRATED with animations created by ELECTRICIMAGE.

ElectricImage's incredible new MOTION BLUR FEATURE, as well as the renowned SPEED of the package, were the deciding factors for Dream Quest. Rendering at a resolution of 2048 by 1024, each frame contained HUNDREDS OF ASTEROIDS, each with TEXTURE MAPS and separate motion paths. According to Dream Quest's Technical Director, Rob Burton, "The ElectricImage motion blur MATCHED our model photography motion blur PERFECTLY." Indeed. And the render times averaged 25 MINUTES PER FRAME on a Macintosh Quadra 840AV!

So the next time that you are in the CHICAGO area, check out SIX FLAGS GREAT AMERICA and the SPACE SHUTTLE AMERICA RIDE.
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The International Journal of Film and Electronic Production Techniques

July 1994 Vol. 75 No. 7

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On Our Cover: Brooding photography by Stephen Burum, ASC lends *The Shadow* (Alec Baldwin) a mysterious aura (photo by Ralph Nelson).

Contributing Authors:
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Bruce Block
Brooke Comer
Ron Magid
Les Paul Robley
Robert Skotak

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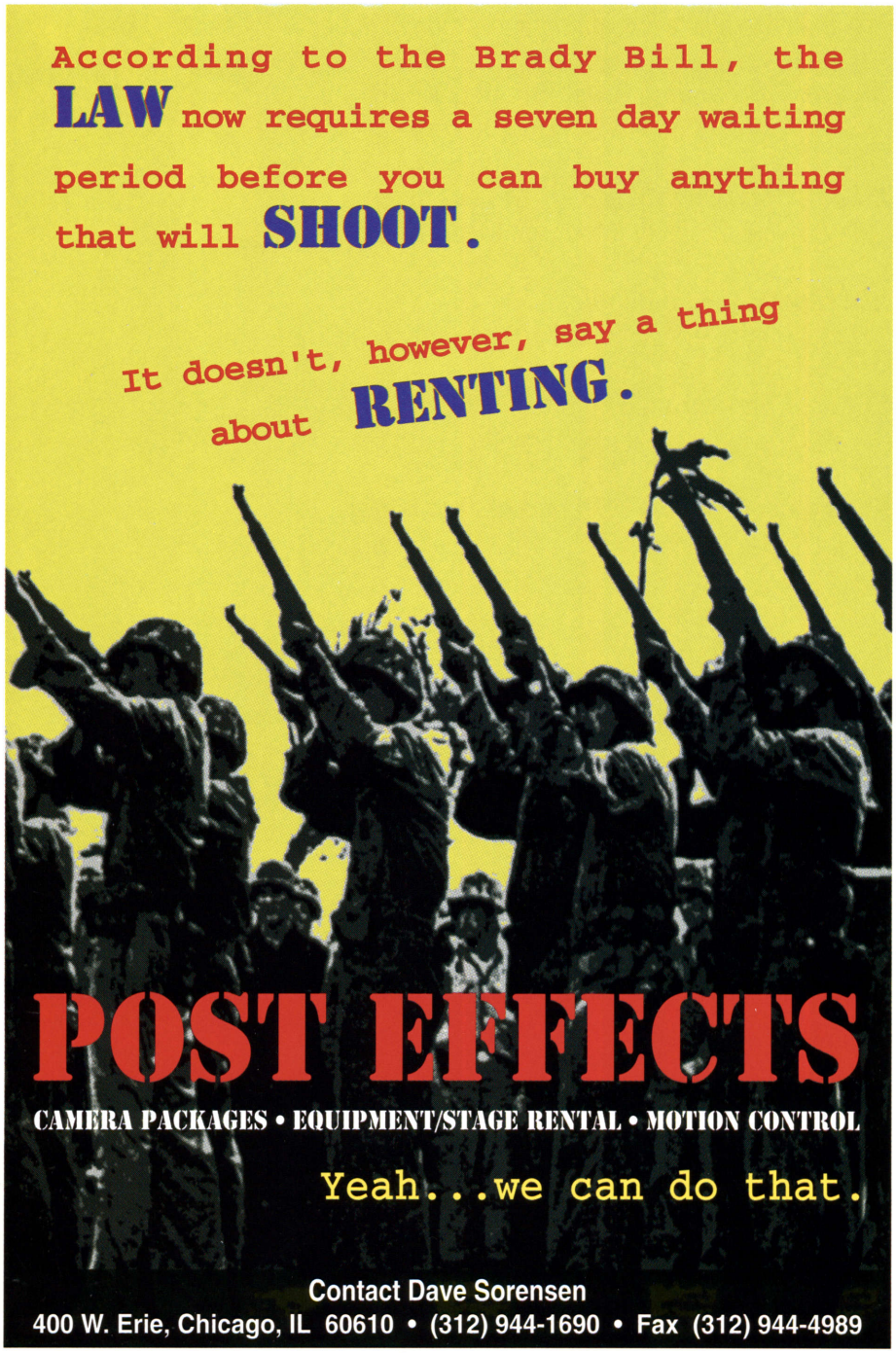
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Let the magic begin.

Captured on EXR 5298 film at dusk, 7:00 p.m. (EST), with existing light outside, tungsten lighting inside, film speed of 500, camera speed of 48 fps, T-stop of T3.5.

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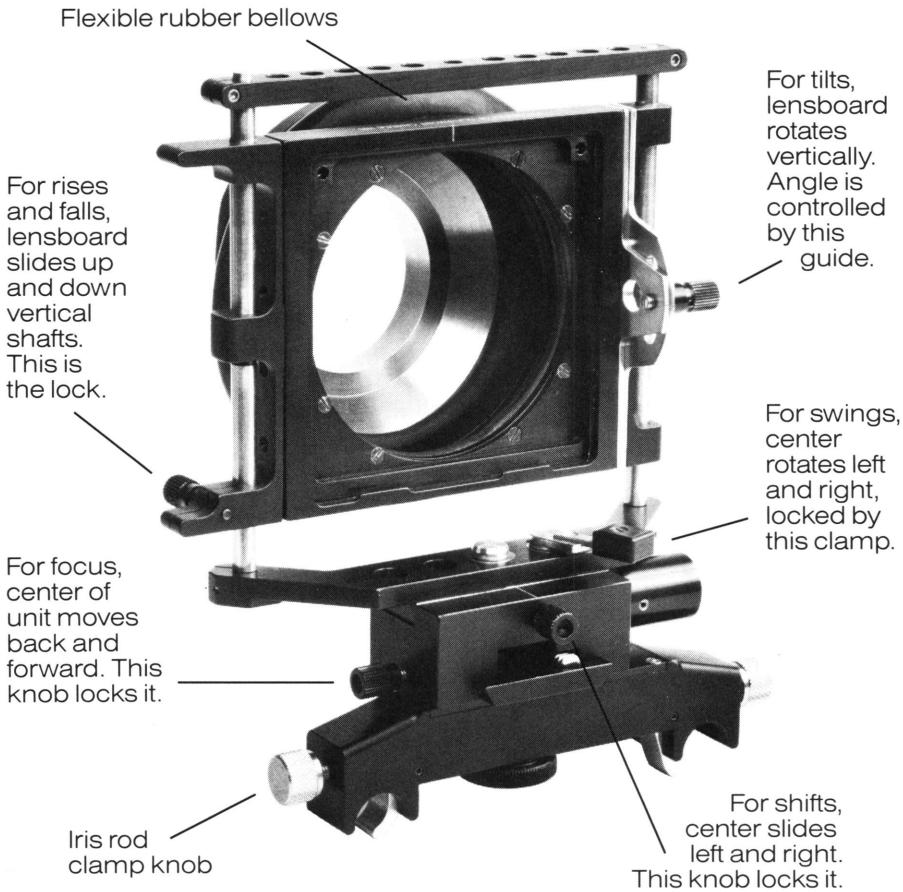

Flexible rubber bellows
For tilts, lensboard rotates vertically. Angle is controlled by this guide.
For rises and falls, lensboard slides up and down vertical shafts. This is the lock.
For swings, center rotates left and right, locked by this clamp.
For focus, center of unit moves back and forward. This knob locks it.
Iris rod clamp knob
For shifts, center slides left and right. This knob locks it.

The view camera has employed bellows, swings, tilts, rises, falls and shifts for about a hundred and thirty years.

Shoot head-on into mirrors

Now our BLs and Type 3s can use them, too. You can make an egg spherical and make a billiard ball egg-shaped. You can shoot directly head-on into mirrors and not see yourself. Or remove a foreground telephone pole without changing your angle of view.

Almost infinite depth of field

In Ansel Adams' famous still photograph of Mount Williamson, the mountain range is on the horizon, about a mile away. In front of it, the ground is strewn with boulders, the nearest one three or four feet away. By tilting his lens down, Adams changed the plane of sharp focus from vertical to more nearly parallel with the field of boulders. *Everything is in focus.*

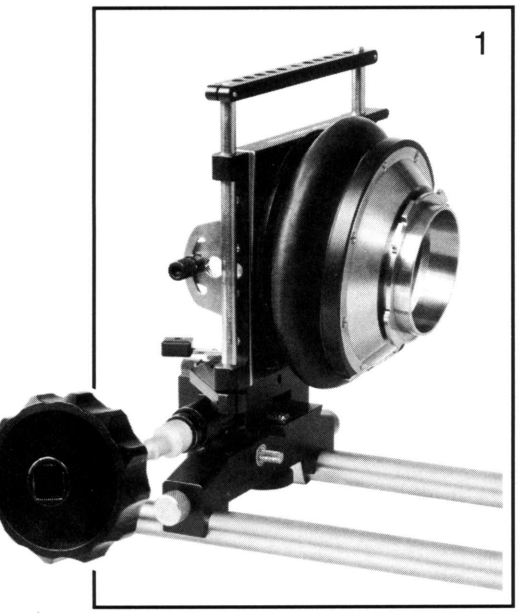
No need to stop way down

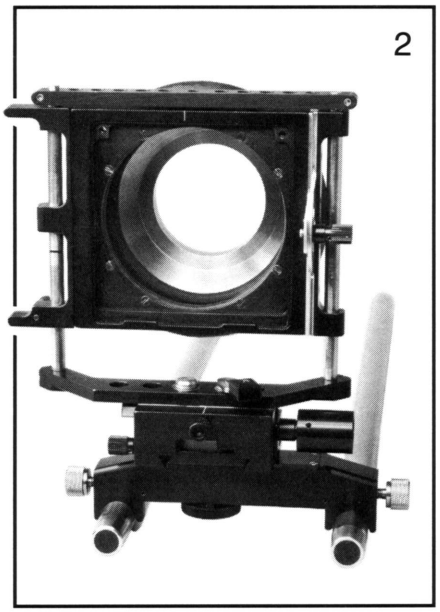
Shooting from one side at a 45° angle, you compose a two-shot of a car's driver (near you) and the front-seat passenger (further away). By swinging your lens to the right (to the left in Britain), you can easily hold focus on both people because the plane of sharpness then runs along the front of both faces.

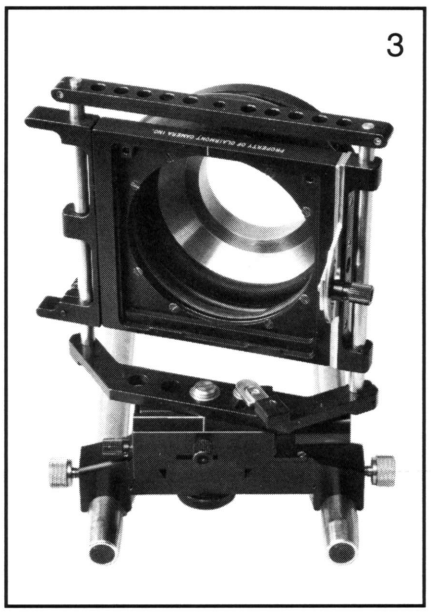
The Swing/Shift is a PL mount system designed and built by Clairmont for our BL and 35-3 cameras.

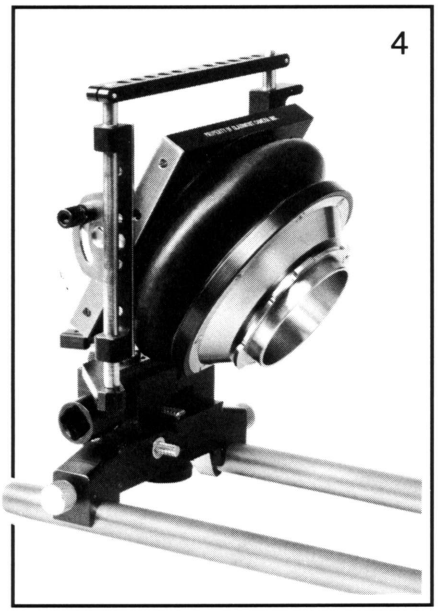
Controlling focus and shape

The rule is: Tilting/swinging the lens plane alters the *focus;* tilting/swinging the film plane alters the *shape.* With the car two-shot, you swing the lens but you *don't* move the camera body (film









1. Lensboard/front in lowest (Fall) position. Note remote focus. Unit is mounted on iris rods. 2. Lensboard/front at far right (Shift) and at highest (Rise) position. Rises and Falls are vertical Shifts, of course. 3. Lensboard/front in far right Swing position. 4. Lensboard/front in extreme upwards Tilt position. Swings and Tilts can be combined.

Close focus for tabletop

The Clairmont Swing/Shift has built-in rack and pinion focussing. You can change focus during a shot without anything touching the lens. The bellows extends, of course, so you can focus down to a few inches. We're adding lenses to the range, including some that are designed for close work.

Photographer impressed

Paul Gaffney is a First Assistant in New York. He has worked, as a still photographer, with view cameras. He used our Swing/Shift on a recent TV commercial shoot. "I was impressed with the *amount* of swing and shift available," he says. "This is a giant step backwards in the right direction."

plane). If you tilt the camera body up at a skyscraper, you're tilting the film plane. The skyscraper's shape will be altered – its sides will converge.

Perspective and position control

To keep the sides of skyscrapers and cereal boxes parallel, you have to keep the camera body level. If you'd like to see less foreground (at the bottom) or more skyscraper (at the top), you can shift the image down in the frame by moving the lens laterally up. To suit your composition, you can shift the cereal box up or down or to either side within the frame – while keeping the sides parallel and without altering your angle of view.

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Letters

Mildly Amusing

The article "A Grand Tour for Innocents Abroad" (AC April), although mildly interesting and amusing, nevertheless prompts some questions.

The author states Mr. Les Blank "employed his own 16mm Aaton . . . for the entire three week shoot." Later, we are told that 5248 and 5294 were used. How did Mr. Blank cram 35mm stock into a 16mm Aaton?

Another question. If Mr. Blank used a total of four batteries a day and if he got three 400' rolls from each battery, the total shot each day was 4800'. However, the subheading of the article states "Europe on 8,640 feet a day." Huh?

Please clarify. I am thoroughly confused.

— Robert E. Rogers
Dallas

Ed. note: The subhead was meant as a play on words, not an actual expression of footage requirements. Mr. Blank, rather than trying to cram 35mm stock into his Aaton, simply used the 16mm version of these emulsions. Please note producer Vikram Jayanti's letter below. Our apologies for the confusion.

Innocents Correction

In an otherwise wonderful article on our documentary film *Innocents Abroad*, Les Paul Robley made one grievous error which the three of us feel we must urgently correct. He writes that Globus Gateway (whose coach tour we filmed) only allowed us on board "on the proviso that the completed film make them look good."

There was no such proviso, nor would we have accepted such a condition, and it's wrong to give that impression. The reason that the finished film doesn't make the tour company look bad is because we found — to our great surprise, given our own backgrounds as individualistic and spontaneous world travellers — that the service they provide is actually very good. We feel that *Innocents Abroad* captures the heart of the experience.

With hindsight, we see that Globus Gateway had every right to be confident in taking the risky gamble of allowing a very independent film crew complete and uncensored access to one of their tours.

Two more details: we shot the film on 16mm, not 35mm, using Kodak 7292/asa 125 (now discontinued) and 7248/asa 100 balanced for tungsten, and 7245/asa 50 and 7297/asa 250 balanced for daylight. Even more important, please note that Les is only 58, not 59!

— Vikram Jayanti, producer
Les Blank, director/cameraman
Chris Simon, editor and sound

This is Sutorama!

I enjoyed very much the HDTV Standards discussion in the March issue, but it is clear there is still a lot of confusion concerning the logic of 16X9 and its origins. The 16X9 format is really quite logical using simple math averages:

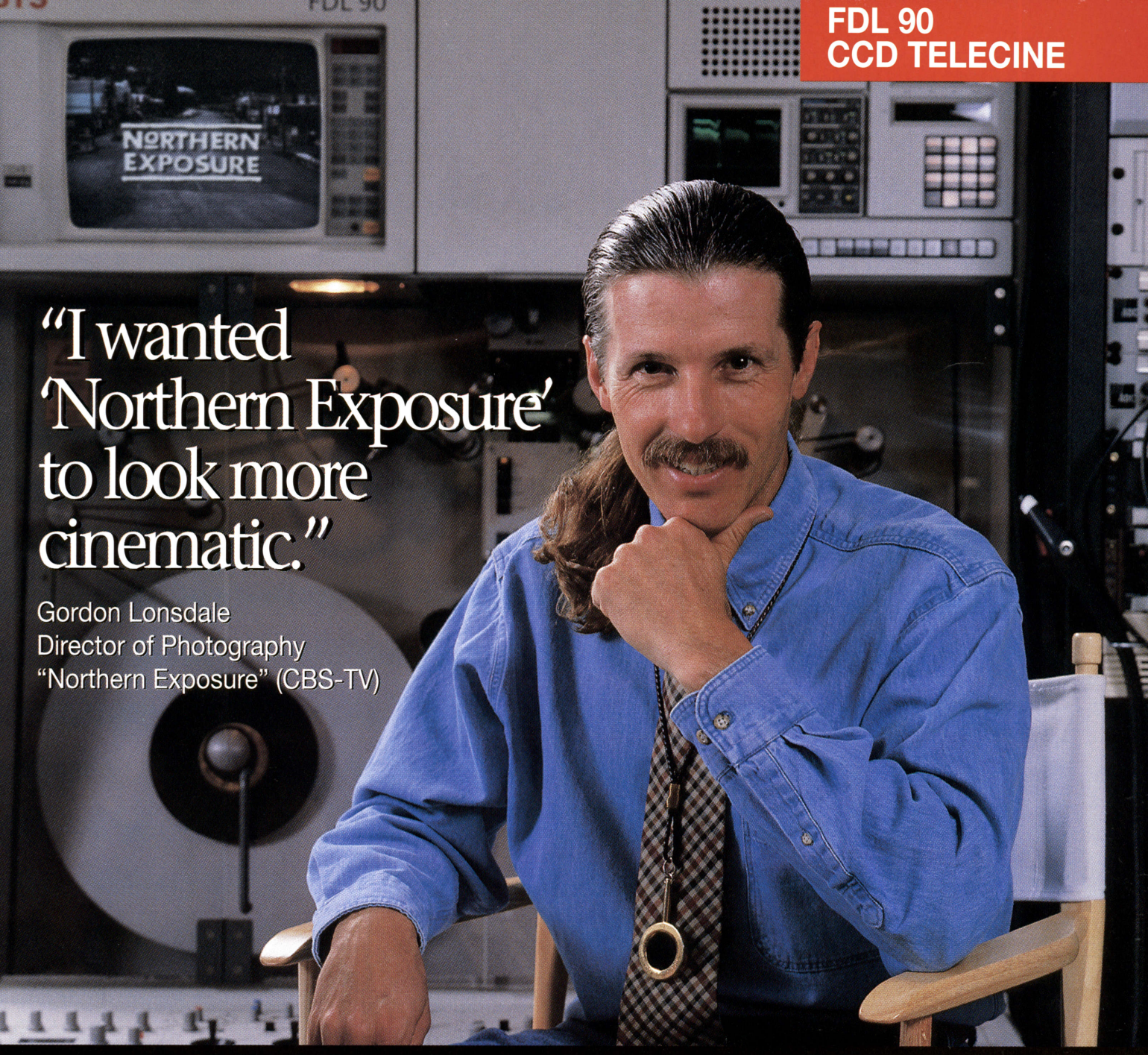
2.35 + 1.33 = 3.68 ÷ 2 = 1.84 (close to 1.85:1);

2.35 + 1.175 (true Academy aperture excluding soundtrack area) = 3.5250 ÷ 2 = 1.7625 (close to 1.77:1);

16 ÷ 9 = 1.77.

I believe cinematographers should be more concerned about the horrendous practice which continues in exhibition, particularly by the AMC Theatre chain, of projecting 2.35:1 anamorphic images onto 1.85:1 aspect ratio widescreens. Less than half of AMC's multiplex screening rooms can even fit a 2.35:1 screen! They and other exhibitors have been doing this for over a quarter century. I call it Exhibition Abomination!

Available image area for 35mm films has been wasted for more than 40 years since the introduction of CinemaScope and the attempt of flat



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"Northern Exposure" is transferred on the BTS FDL 90 CCD Telecine by Digital Magic, a full-service digital post-production facility in Santa Monica, Calif.

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Light weight also helps in transportation and in setting up. The longest Swissjib case is 7 feet. You can slide it into a station wagon or ship it by air. The crane can be assembled in 10 minutes by two people or in 20 minutes by one man/woman.

Those people are already on your crew payroll. The Swissjib was designed by a cinematographer to deal with real-life considerations, including cost. No need to hire a special technician. No need to book him and the equipment in advance for a specific day.

The Swissjib can be used on any crab dolly. But you can also rent (or buy) its partner—the lightweight Swissdolly. With this, you can save time by keeping the crane set up and ready to go, instead of switching things around on your main dolly. The Swissdolly rents (and sells) for about a quarter of what you pay for a big dolly.

The head has levelling built in—no need for an additional three point. The levelling rods and control cables run *inside* the two-meter arm tubes—no external guide lines to snag on window frames. The locking tube connectors are cast aluminum, made in Switzerland by perfectionists. No assembly tools needed.

At the 35 foot arm length, maximum load is 55 lbs. At 28 feet, it's 110 lbs; at 21 feet: 155 lbs. At 35 feet, you can fly an ARRI 3 with video tap, 400 foot load and 14-70mm Cooke, on a Pee Pod (the new lightweight Power Pod). Or you can use an ARRI 16SR.

At 28 feet, you can shoot sync sound with a Moviecam Compact, video tap, 400 foot load and 14-70mm, on a Pee Pod. At 21 feet: any of the production cameras, in full studio rig, on a Power Pod. At 15 feet and 9 feet: sync sound VistaVision.

Roy Isaia

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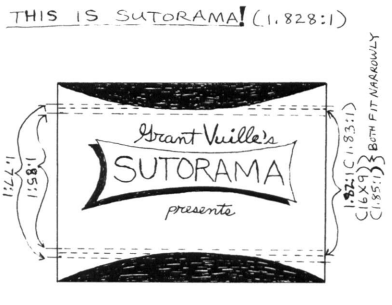
non-anamorphic film exhibitors to widen their horizontals by adopting 1.85:1. I therefore propose a totally new shape for cinema screens for non-anamorphic widescreen presentation. Sutorama (1.828:1), an ersatz Cinerama illusion, requires only alternative screen masking and projector aperture plates. Using 1.33:1 as the standard and a corner-to-corner diagonal line as the radius, two arcs are drawn curving downward from above and upward from below. 1.85:1 fits neatly into this configuration and this new curved shape fits standard NTSC television. A perfectly flat screen now appears to wrap around the audience à la Cinerama! An infinitely more interesting shape to my way of thinking as long as we're in the business of tossing out large percentages of the available 35mm image.

— Grant Sutor Vuille
Dumfries, Virginia



Misquote

I am writing in regard to the article on *Little Buddha* that appeared in your May issue. On page 44 I am quoted in a description of Technicolor's special and proprietary ENR process. Firstly, the comments were taken out of context from an interview done for Eastman Kodak's *In Camera* magazine, not in conjunction with the article that appeared in *American Cinematographer*. Secondly, simply put, I was misquoted: the comments attributed to me are not entirely accurate. I encourage any of your readers interested in a more accurate description of the process and its resultant look to contact me at the Technicolor laboratory in North Hollywood.

— Frank Ricotta,
Senior Vice President,
Intl. Technical Operations,
Technicolor
North Hollywood, CA

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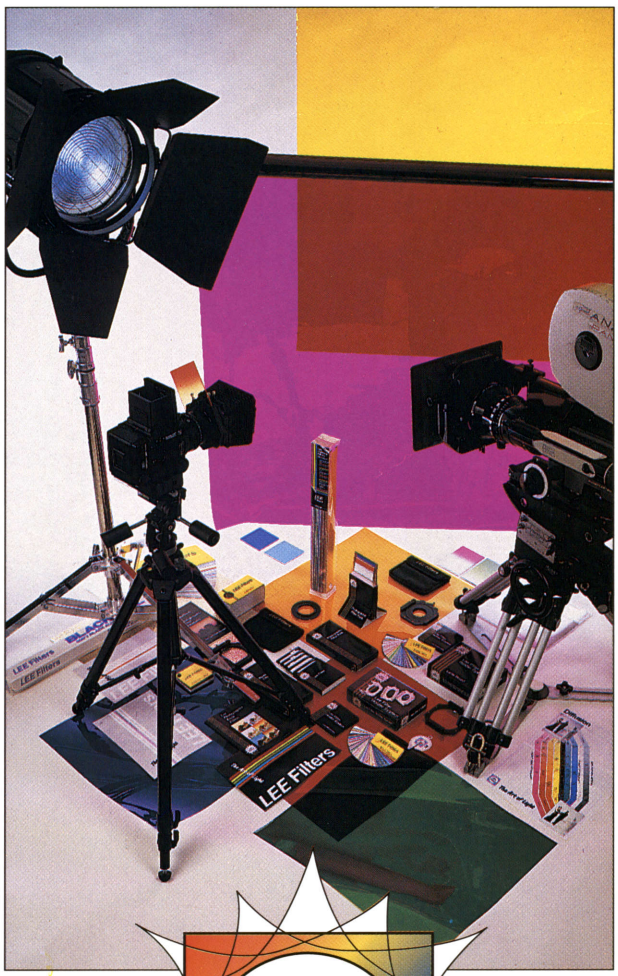

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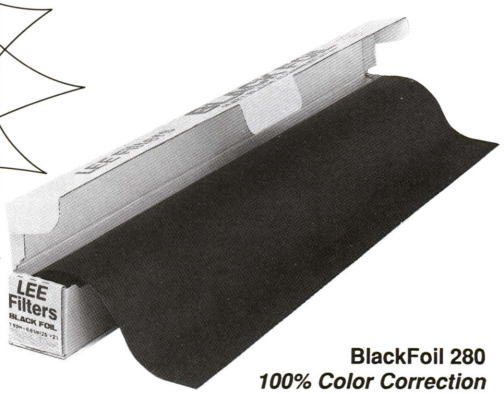

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Production Slate

compiled by Marji Rhea

SkyTel Spot

Award-winning director Robert Blalack, principal of Praxis Film Works, has completed four spots for SkyTel for the Martin Agency of Richmond, Virginia. The spots integrate live action using more than two dozen speaking roles, as well as computer-generated effects. Postproduction was completed at Praxis on its high-speed digital compositing system.

Each spot is a drama about a business or personal need to communicate quickly with someone who is thousands of miles away, a problem that can be solved by using SkyTel's SkyWord or SkyFax services, paging and faxing services that use a high-tech satellite system to send and receive messages.

In "Well-Prepared," a factory manager sends word from the factory floor to a sales rep who has just landed in another city that the site of a meeting has changed. At this point, the spots all have a similar visual stylization that starts with a wide angle and zooms in to a close-up of a phone or keyboard. A complex field of "data" forms into a "data sphere," rockets through a wire, up to a satellite and down to its destination — in this case, the rep in his car.

Blalack earned an Academy Award for Best Visual Effects for *Star Wars* and an Emmy for *The Day After*, and he is currently creating visual effects for several motion pictures. His feature and television credits also include *Altered States*, *Airplane!*, *Robocop*, *Wolfen*, *The Blues Brothers*, *Cat People*, *Fortress*, and the PBS series *Cosmos*.

Eurohost Title

Pittard Sullivan Fitzgerald's main title for the television series of the popular European host Thomas Gottschalk was designed to lure the German population into watching a late-night show, a new concept for that part of the world. Designed by award-winning PSF designer Suzanne Kiley, the main title is an unusual and stunning combination of strong visuals involving live-action 35mm footage of actors in exotic costumes, 3-D graphics, stock footage, and digital compositing.

The Macintosh Illustrator was used for type because of its wide variety of type selection and clean output, and all the elements were then input into the Paintbox for rendering and treatment. The original storyboard frames were created in the Paintbox and additional graphic elements that were part of the open were built in the Quantel unit as well. Once executed, these elements were animated in the Harry.

Pittard Sullivan Fitzgerald provided European TV host Thomas Gottshalk with an eye-grabbing title sequence.

For one frame featuring a saxophone player with the giant letter "G" behind him, the team created a composite of several layers: the "G" was created as a slide, a piece of glass was placed in front of the slide projector and liquid soap was then poured onto the glass to create an organic morphing of the letter when projected. Once projected onto a wall, the letter was then shot with yet another camera and used as a key over vibrant, color-saturated drapery. The sax player was shot on bluescreen and keyed over it all.

For information: PSF, 6430 Sunset Blvd., Suite 200, Hollywood, CA 90028, (213) 462-1190, FAX (213) 462-8301.

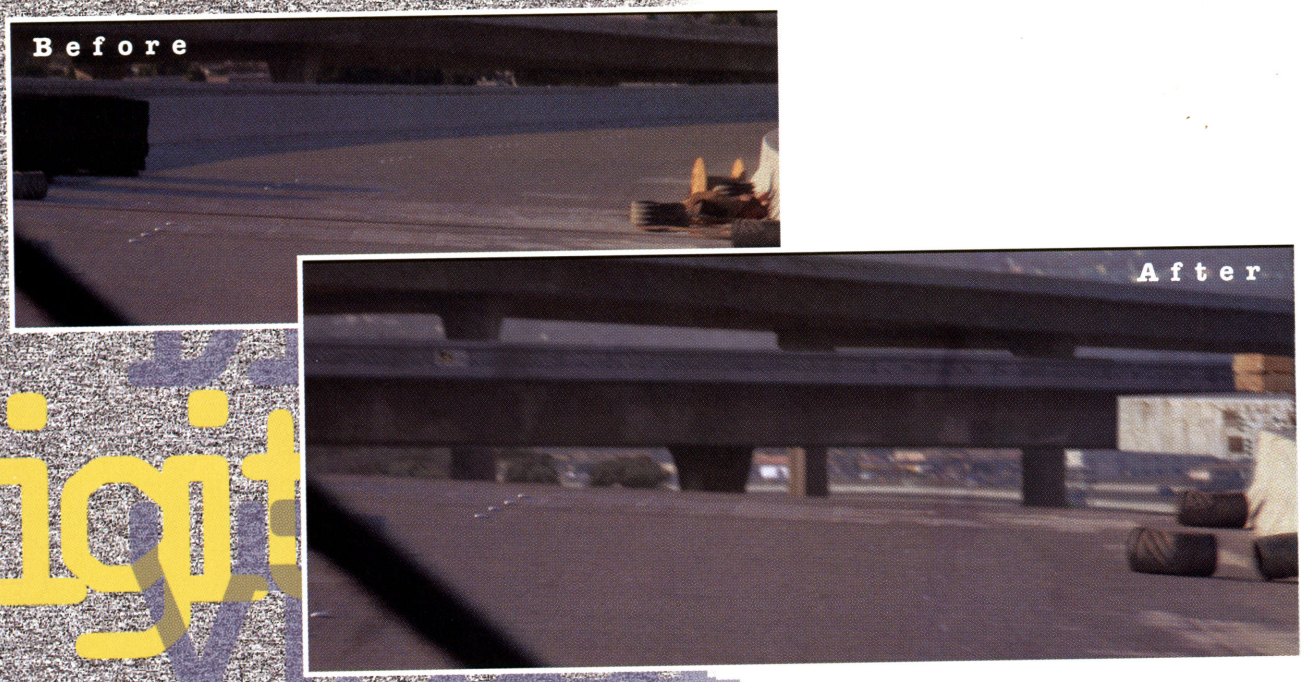
Educational Videos

Grace & Wild Studios of Farmington Hills, Michigan was called upon recently by Woodbridge Video Productions to animate two educational videos for children. A six-minute information/educational video, "Room to Grow with 810," produced for Ameritech, features claymation to help explain a pending change in the telephone area codes for southeastern Michigan residents. It will be distributed to all elementary schools in the 810 and 313 area codes as part of Ameritech's education program.

Grace and Wild's Stage B was transformed into a 13-year-old boy's bedroom. As the teenager completes a note to a pen pal on his computer, he begins talking about the new area code they will be using. While he explains the change, the scene shifts back and forth between him and animations of clay model hands, telephones and a police car that are superimposed over an electronically-generated map of the affected area.

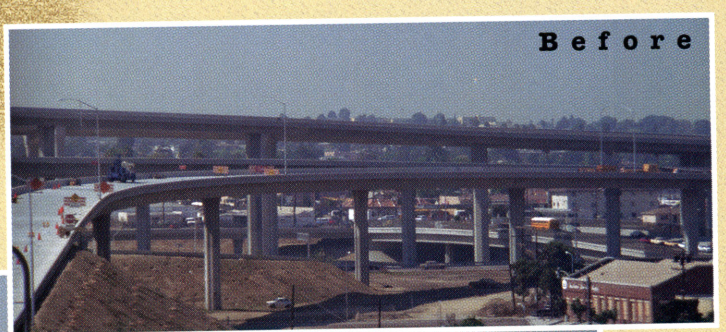
Grace & Wild model maker and designer Tina Coffey created a series of clay hands in the act of dialing and picking up a phone receiver. Animator Matt Campbell animated them as Coffey shot the hands sequentially in single-frame video against the map. The animations brought the boy's words to life as he spoke.

To help get the message across further, digital effects were used to highlight each affected county on the map in yellow as the boy mentioned it. The animated police car helped show



Digital Visual Effects

[and freeway de construction]



Digital for Visual Effects [Speed]

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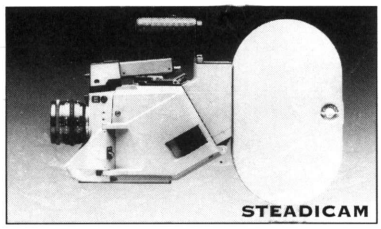
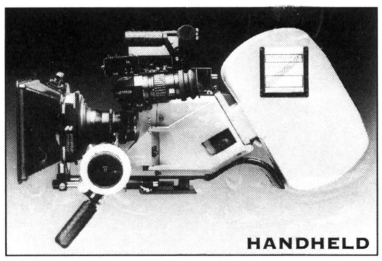
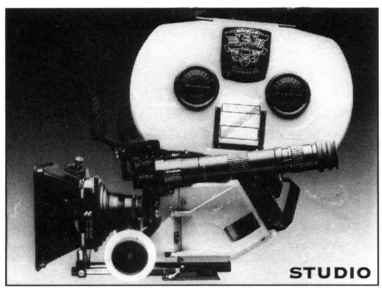
THE MOVIECAM COMPACT







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that 911 remains the emergency number to call for everyone in the area.

The second video was created for Children's Hospital of Detroit to help eliminate children's fears about entering a hospital, and features animated models of the boy and girl sculptures found at the hospital's entrance. The video opens with a shot of the hospital's exterior. As the camera zooms in on the sculpture, it comes to life with the help of single-frame animation which Grace & Wild developed and shot.

The animated children, Jack and Ellie, take the young viewers on a tour of the hospital, showing and telling them about the different places they will see and people they will meet. The tour includes an admissions area, exam room, X-ray room, out- and in-patient facilities, doctors, nurses, and technicians. Grace & Wild superimposed the animated tour guides over the live action in the hospital by chromakeying the characters and layering the scenes with a Kaleidoscope digital video effects system.

Both videos were produced and directed by Sue Marx and Marty Bernstein, who also wrote the script. Charles Green of Propaganda, Inc. designed the set and managed props for the Ameritech video, while Charlie Scott directed the photography for it.

For information: Grace & Wild Studios, 23689 Industrial Park Drive, Farmington Hills, MI 48335, (810) 471-6010, (800) 451-6010, FAX (810) 471-2312.

I Love Trouble, *Speed* Effects

VIFX, a division of Video Image, was recently formed as a separate division of the company, encompassing computer-generated imagery (CGI) services and digital compositing services. Richard Hollander, head of VIFX' CGI Effects, was the visual effects supervisor for the film *I Love Trouble*, for which the company was called upon to create 3,000 or so rats inside an empty van. Hollander chose to use digital work rather than animation for the shot; to accurately model the animals' movements, he studied National Geographic specials and other documentary footage showing rats in their natural environment. Using Discreet Logic's Flame tracking system in tandem with VIFX' own in-house digital computer techniques and specially designed software, computer-generated effects were created at a fraction of the time and cost of animation techniques, taking one week rather than the estimated six months it would take using classical animation processes.

The team also used Flame for effects for the action thriller *Speed*. Using the Flame Action module for multilayer compositing in conjunction with the Flame Stabilizer, VIFX enhanced helicopter action footage of a bus racing down a freeway by creating a looming 40-foot gap in the road. Together with the helicopter action footage, they composited 3-D computer-generated models of wood scaffolding, along with several 2-D painted background mattes of elements of the freeway, and the artificial gap in the road, as well as "2.5-D" artificial elements to account for shifting planes in the shot.

Working closely with the film's director of special effects, Boyd Shermis, and using additional proprietary tracking techniques developed at VIFX, the team composited all of the elements seamlessly into the shot. Hollander used Flame to match camera movement to the helicopter footage and to follow size changes of the various elements caused by panning and zooming.

For information: VIFX, 5333 McConnell Avenue, Los Angeles, CA 90066, (310) 822-8872, FAX (310) 821-1012.

Silicon Valley Digital Facility

Metropolis Digital Inc., a computer animation, effects, and motion graphics facility for television and film, has opened in San Jose. The company features co-founder Dan Casey and lead designer Lisa Lo, and uses Silicon Graphics workstations. Design, compositing, rotoscoping and color-correction are all accomplished digitally, remaining resolution-independent for development in any medium. The facility's non-linear environment further enhances speed, flexibility, and greater file management. Other specialized capabilities include two- and three-dimensional morphs, motion tracking, and camera stabilization. Metropolis Digital will also be working in high-end video game development, creating character design and animation, as well as title screen and background development.

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Janusz Kaminski, *Director of Photography*

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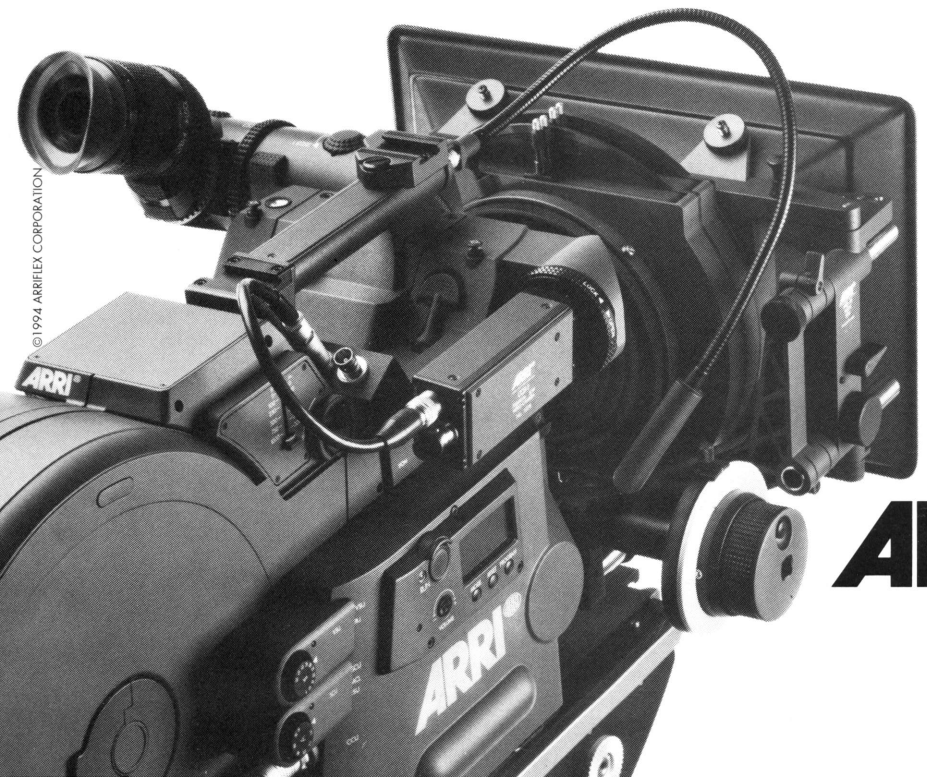
Michael Ballhaus, *ASC, Director of Photography*

FAREWELL MY CONCUBINE
Gu Changwei, *Director of Photography*

the Piano
Stuart Dryburgh, *Director of Photography*

DAVE
Adam Greenberg, *ASC, Director of Photography*

MUCH ADO ABOUT NOTHING
Roger Lanser, *Director of Photography*



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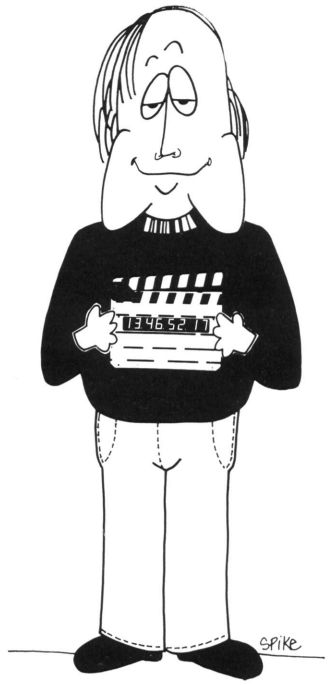

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Macintosh and PC platform support offers the diversity of manipulating, re-creating and transferring graphics files in a variety of formats. Computer-to-video, video-to-computer, and rendering services are also available.

For information: Metropolis Digital, Inc., 12 South First Street, Suite 1000, San Jose, CA 95113, (408) 286-2900.

New Digital Wing

Editel/L.A. has unveiled the first phase of their new 5500-square-foot digital wing. The new component edit suite offers a Grass Valley 4000 Component Switcher and an Axial 2020 Rave Edit System in conjunction with two Dual Channel Accom RTD Disk Drives and three Ampex DCT Component Digital VTRs. The room will function in either component 525 or 625 format.

The suite, as well as the rest of the facility, is supported by a digital machine room, the main artery of the facility, comprised of a Pro-bel 128X Digital Serial Video Router, 256 X 256 Digital Audio Router, and RS-422 Control Routing. The Henry and Harry will be moved into this wing with room for additional graphics suites.

For information: Editel/L.A., (213) 931-1821.

X-Ray Effects

Complete Post of Hollywood recently used digital effects technology to piece together fluoroscopic images of a human skull for a 30-second spot for Oral-B. The spot opens on a sleek dental office, where a computer monitor displays an image of a woman brushing her teeth with Oral-B's new Advantage Plaque Remover toothbrush. This scene dissolves to a fluoroscopic image providing an X-ray view of the woman's teeth interacting with the brush. The X-rays were recorded with the aid of an actual fluoroscope, but because the fluoroscope could record only a small portion of the woman's head at a time, the image of the whole skull had to be assembled from many individual pieces, a task accomplished at Complete Post on a DP-Max 4:2:2 digital compositing device. Because of the complex structure of the human face, the process took some intensive DP-Max sessions to get the details perfect. The company also performed pin-registered film transfer, color correction and online editing for the project.

For information: Complete Post, 6087 Sunset Blvd., Hollywood, CA 90028-6475, (213) 467-1244.

Animated Infohighway

National Video Center senior designer/creative director Clifton Moorhead painted and animated the information superhighway in a video designed to create interest in the potential of the newest offering from NBC Marketing, called NBC Viewer Service. The video focuses on a marketing executive's quest for the ultimate marketing tool. During a phone call, he's suddenly beamed up to an information database/superhighway. In this fantastic environment, he meets an oracle of information who describes the new interactive series that NBC Marketing offers to advertisers. The digital scenes required extensive interaction between live footage, shot with Ultimatte in National's TV-3 studio, and layers of animation. The shoots were technically difficult since each actor had to be shot separately and the footage prepared for compositing, while continually planning for last-minute changes. Other animated scenes include a view inside the superhighway — showing live-action footage, magazine articles and microchips — and moving type set against elegant backdrops, including Hi-8 footage of water, shot by Moorhead.

For information: National Video Center, 460 West 42nd Street, New York, NY 10036, (212) 279-2000.

British Film Archives

The British Crown Archives, one of the world's most extensive film collections, has opened its first North American office in Los Angeles, and are making available millions of feet of rare and unique British film footage produced over the last 60 years. The BCA holdings are public information films produced by the British government, and the collection consists of finished films only, not stock footage or raw material. BCA's war footage alone includes more than 3,000 information films and 300 feature-length films, and document not only actual battle scenes but also the war's impact on daily British life. Some of the more unusual films include *Welcome to Britain*, a 1944 instructional film for arriving Americans in the United Kingdom for the build-up to D-Day, featuring Bob Hope,

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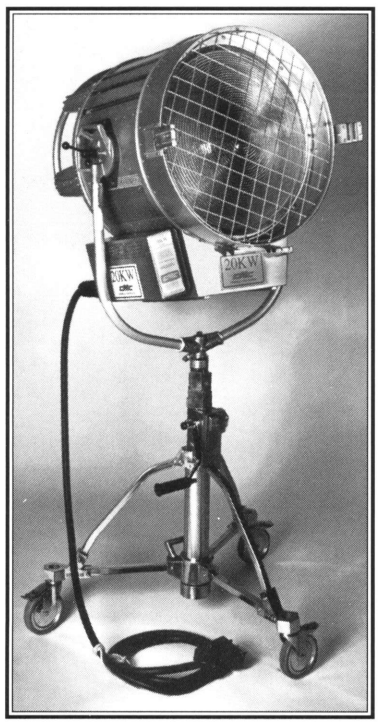

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For information: The History Factory, 2831 Fifteenth Street, NW, Washington, DC 20009, (202) 387-3228, FAX (202) 387-0666.

Animated Mascot

Garri Garripoli of Florida's Garripoli Designs has created an animated checkmark for Payless Car Rental's first foray into the world of television advertising. The new mascot is a combination of 2-D animation and fully articulated 3-D character animation and appears in a series of :15 entirely animated spots. The designers chose 3-D over cell animation for the attention grabbing effect. Vic Fina completed the 3-D animation using Garripoli's Wavefront with the Dynamation option, and Michael Tyson did the 2-D animation on the Getris Venice system.

For information: Garripoli Designs, 5410 Mariner Street, Tampa, FL 33609, (813) 288-0005, FAX (813) 289-0728.

Fruit Drink Animation

Xaos recently contributed its unusual brand of computer animation to "Liquid Basketball," a commercial for Capri Sun fruit drinks. The 30-second spot, a combination of live action and computer-generated effects, features alien kids who come to a basketball court in the form of thick, metallic liquid, which transforms into the shape of humans. Xaos animators created the traversing mercuric liquid using proprietary metaball software. The puddles rise up from the ground in human form, then morph into image processed figures of live characters. Before the Capri Sun-toting aliens are discovered, they transform back into liquid puddles with a heavy splash and slide away.

In addition to metaball and image processing techniques, Xaos animators added motion blur, shadows and reflect maps. The reflect maps gave the liquid its metallic look, reflecting surrounding imagery in its surface. To aid in matching the computer animation with the live-action perspective, effects producer Roberta Brandao and creative director Mark Malmberg were on hand during the shooting of the scenes to ensure that color, lighting and camera angles would blend in the finished piece.

For information: Xaos, 600 Townsend, Suite 271E, San Francisco, CA 94103, (415) 558-9267, FAX (415) 558-9160.

Pizza Spot

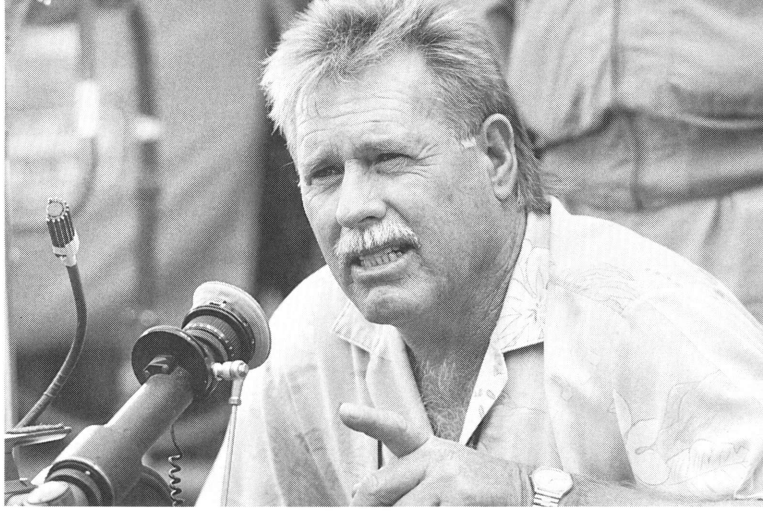
Planet Blue has done visual effects and compositing for a series of commercials for Pizza Hut featuring over-the-top company spokesperson Ricky testifying before the U.S. Senate as to the economical value of Pizza Hut's Bigfoot. Four elements were composited in each spot: a foreground miniature of the Senate, made by Brick Price of Wonderworks; a Pizza Hut shot on location in Los Angeles; a background plate of surrounding buildings, shot in downtown L.A. to resemble Washington, D.C.; and greenscreen shots of pedestrians to be composited on the walkway of the Senate model. Planet Blue used an electronic pan, assembled from the different angles and iighting levels for each plate. While director of photography Stefan Czapsky shot the miniature Senate in front of the Pizza Hut at the same time, a nodal camera pan was required to keep the perspective correct and give it real depth of field. These elements, as well as the background buildings and greenscreens of pedestrians, were transferred by Planet Blue colorist Wayne Hampton in preparation for compositing.

To marry the spots, Planet Blue visual effects compositor Maury Rosenfeld developed the electronic pan. "We did things like imitate lens aberrations so that the perspective shifts as you pan across," he explains. "Electronically, we added a 3-D vanishing point and synthetic motion blur to make the surroundings look very natural, so the Senate, pedestrians, Pizza Hut and background buildings looked like a real neighborhood." He also retouched scenes to remove power cables and street lights and color corrected the Pizza Hut roof to make it look snappy.

For information: Planet Blue, 1040 N. Las Palmas Ave., Los Angeles, CA 90038, (213) 871-8280.

ANGENIEUX ZOOMS IN

Shooting 16mm with ASC Award-Winner Roland Ozzie Smith.



On the set of *Dr. Quinn, Medicine Woman*, DP Ozzie Smith prepares the next shot. At his side is an Arri 16SR 3 with an Angenieux 11.5-138mm T2.3 lens.

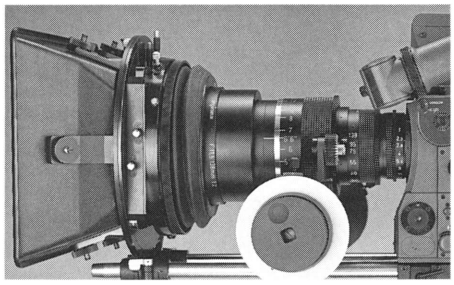
A veteran of the MGM camera department, Roland Ozzie Smith's numerous television credits include: Alien Nation, The Fall Guy, Hunter, Cover-Up, *and* Flamingo Road.

"35mm look on a 16mm budget. . ."

Ozzie hadn't worked in 16mm for over 20 years. "It's the biggest challenge I've faced as a cinematographer—getting the saturation, the depth, and the sharpness I require, all the way to the edges of the 16mm frame."

". . . all day, every day."

"In shooting 16mm, I'm putting so much information on a tiny negative that whatever happens *in front* of the negative makes a huge difference," says Smith. "That's why we use the Angenieux 12X every day."



"I gotta have it."

Smith tested several lenses prior to production. "I was immediately impressed by the resolving power of the Angenieux. We examined the resolution at intermediate focal lengths, and I'd never seen a lens as sharp over the entire zoom range."

"Sharpness is critical. . ."

On the set, the 11.5-138mm continues to exceed Smith's expectations. "At T2.3 the lens is fast enough to use on night exteriors—and it's as sharp wide open as it is stopped down."

"I love the range. . ."

"Having all the focal lengths from 11.5 to 138mm is a big advantage when shooting a series like *Dr. Quinn*. It gives me a lot of latitude."

". . . day after day."

Amid the rigors of location shooting in the dust and dirt of a western set, the Angenieux 11.5-138mm has proven rugged and dependable. Says Ozzie, "You can make anything work for a day—but to have it last through the battle and still perform flawlessly is what's important."

"The right lens. . ."

So what's the result of Roland Ozzie Smith's endeavor to coax a 35mm look from 16mm film? "Outstanding Achievement in Cinematography" reads the award presented to him by the ASC, for his work on *Dr. Quinn, Medicine Woman*. And how important is the Angenieux 11.5-138 to capturing Ozzie's vision for the series? "Without the right lens, I couldn't have gotten the look I wanted."

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July 5-22: Cinema Studies program for high school teachers to aid in developing methods for incorporating film in curricula, NYU Tisch School of the Arts, NYC. For information: Mariellen Gallagher, (212) 998-6797.

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July 8-13: Professional Photographers of America Convention, Electronic Imaging Conference and Trade Show, Denver. For information: (404) 522-8600.

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July 15, Deadline for entries: Chris Awards, the 42nd Annual Columbus International Film & Video Festival, Columbus, Ohio. For information: 5701 North High Street, Suite 204, Worthington, OH 43085-3960, (614) 841-1666.

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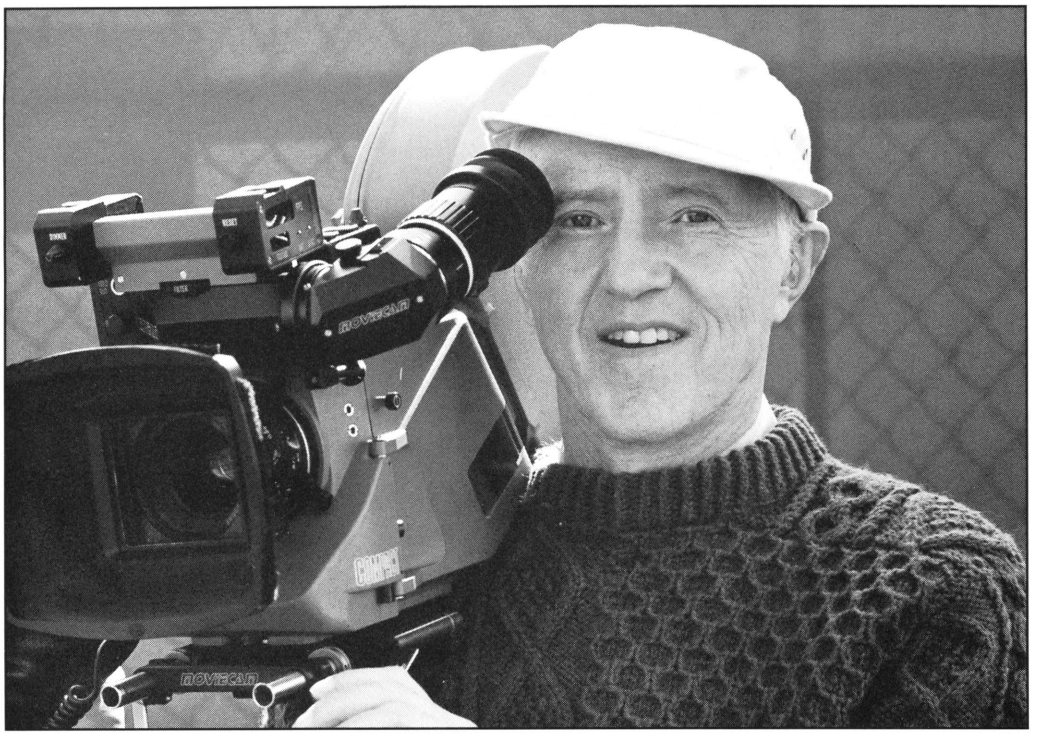


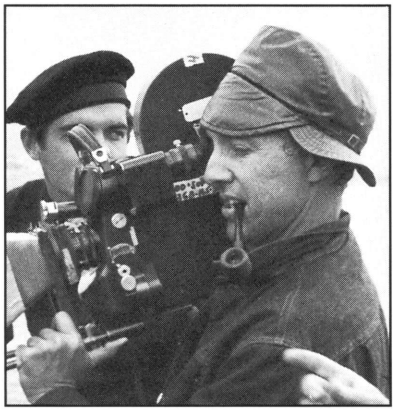
Haskell Wexler's cinematography has won two Academy Awards and five Nominations. The Awards are for *Who's Afraid Of Virginia Woolf* and *Bound For Glory*. His three most recent Academy Nominations were for *One Flew Over The Cuckoo's Nest*, *Matewan* and *Blaze*. One of his documentaries also won an Academy Award. He wrote, directed and co-produced the features *Latino* and *Medium Cool*. His two most recently released feature films are *Other People's Money* and *The Babe*.

Haskell Wexler ASC explains why he bought his Moviecam Compact

"If I had to make a film with just one camera, the Compact would be it," he says

"Why do I like to own my cameras? I know it doesn't make a lot of sense," says Haskell Wexler. "I like to feel they're my personal instruments."

"And I want to know everything that happens to them. People sometimes ask if they can rent one of my cameras, but I never want to do it. That's been my attitude right from the start, which was a windup Bell & Howell."



Shooting *America America* with one of his five Eclair CM3 cameras. Pointing hand lower right belongs to Director Elia Kazan.

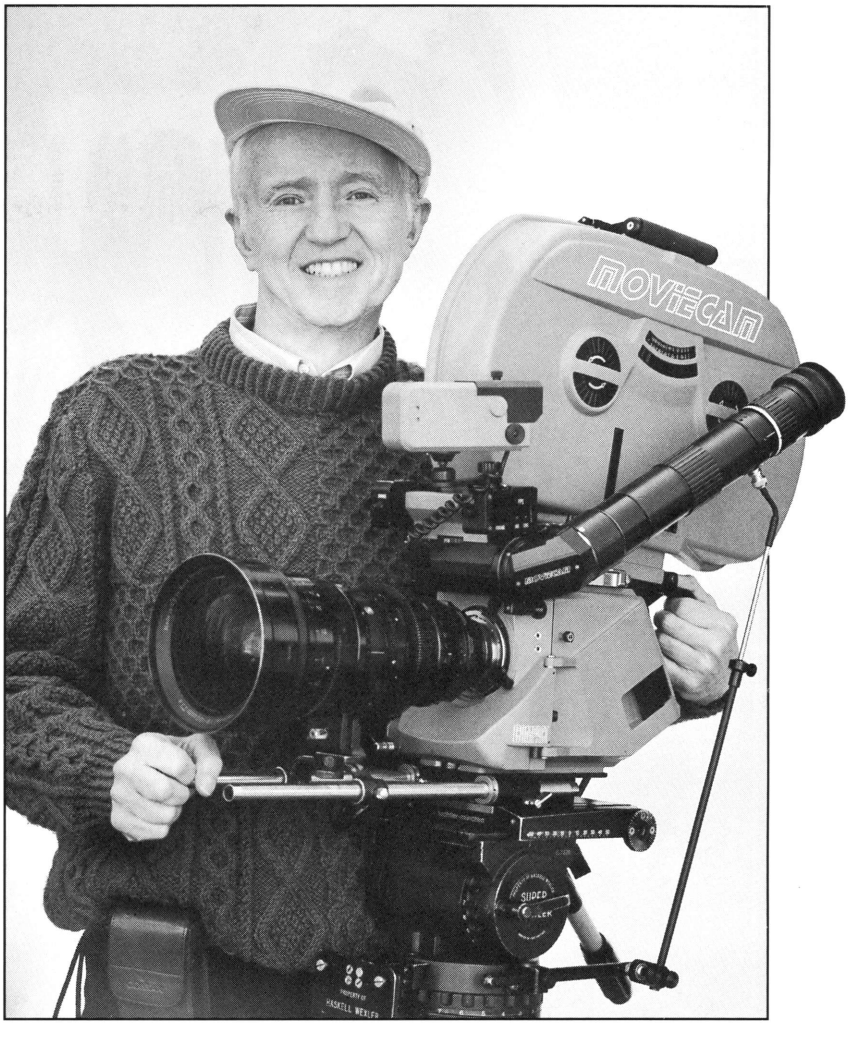
"Then came a Bolex, a Mauer, a Pennybaker Auricon, an NPR, an Aaton 16. My first 35 was an ARRI combat camera. I've had Arriflexes all my life – and still do. At one time I owned five Eclair CM3s. I've shot a lot of pictures with those and I still use them."

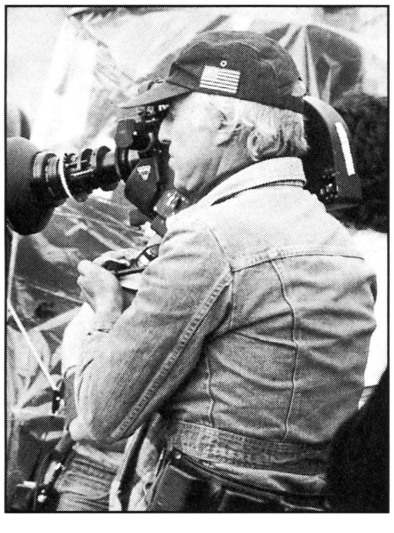
"In 1992 I went to a USIA film seminar in Berlin. Ted Churchill and Denny Clairmont had told me about the new Moviecam; so after the semi-

nar I went to Vienna to look at it. I didn't expect to buy one then, but I did; and I've now shot two features with it: *The Secret Of Roan Inish* and *Canadian Bacon*."

"Neither of those is out yet; both were tough on equipment. We shot *Roan Inish* on the rocky Northwestern coast of Ireland—lots of salt spray and steep terrain. Much of *Canadian Bacon* was shot in extreme cold. The Compact worked perfectly."

"I used it even when there was no dialog. I like to shoot MOS scenes while the actors aren't aware we're rolling. The Compact was so quiet and so well-balanced, I could shoot unobtrusively, hand-held."





With his 16mm NPR. He's made 30 documentaries, bringing that technique to his cinematography and direction of feature films.

"In essence, here's what I found: Those things the other production cameras don't *quite* do—really being quiet, or really being hand-holdable, or really being Steadicam-friendly—the Moviecam does. And it does them all well."

"If I had to make a film with just one camera, the Compact would be it," says Mr. Wexler. "Apart from my house in Santa Barbara, it's the most expensive thing I own. It's also the single best camera I've ever owned, or rented."

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The Modular Compact

Mixing Romance and Action on *I Love Trouble*

Cinematographer John Lindley lends varied visuals to complex story.

by Bruce A. Block

Finding a visual style for a film begins with an analysis of the script. In this case, *I Love Trouble*, by Nancy Meyers and Charles Shyer, was a complex story — involving a modern battle of the sexes, industrial secrets and murder — that might best be described as a romantic thriller. Meyers and Shyer had worked with director of photography John Lindley on their production of *Father of the Bride* and asked him to photograph this film for Caravan Pictures/Touchstone.

Father of the Bride had a simple visual scheme and used a limited range of colors and camera angles. *I Love Trouble* would need a much broader scope of visual elements to compliment the complex script's wide range of romantic scenes, action sequences and varying dramatic situations.

Most importantly, Meyers and Shyer wanted the film to have a warm, romantic look because the driving story element is the romance that develops between rival reporters Peter Brackett (Nick Nolte) and Sabrina Peterson (Julia Roberts). They knew that mixing romance with *I Love Trouble's* large action sequence could be visually tricky and that great care would have to be taken to keep the movie from constantly shifting gears from a "romantic look" to an "action look." Meyers, Shyer and Lindley agreed that the slick, pyrotechnic look of a modern action film should not overwhelm the overall romantic quality needed to keep *I Love Trouble* looking warm and beautiful.

Directed by Charles Shyer
Produced by Nancy Meyers
Director of photography, John Lindley

"I'd ask myself when approaching the lighting for every scene: 'Is this romantic?'" recalls Lindley. "I didn't think the film should have a high-concept look or an overly-colored circus backlight scheme. I tried to keep the people warm and golden no matter what the situation."

Photos by Ron Batzdorff

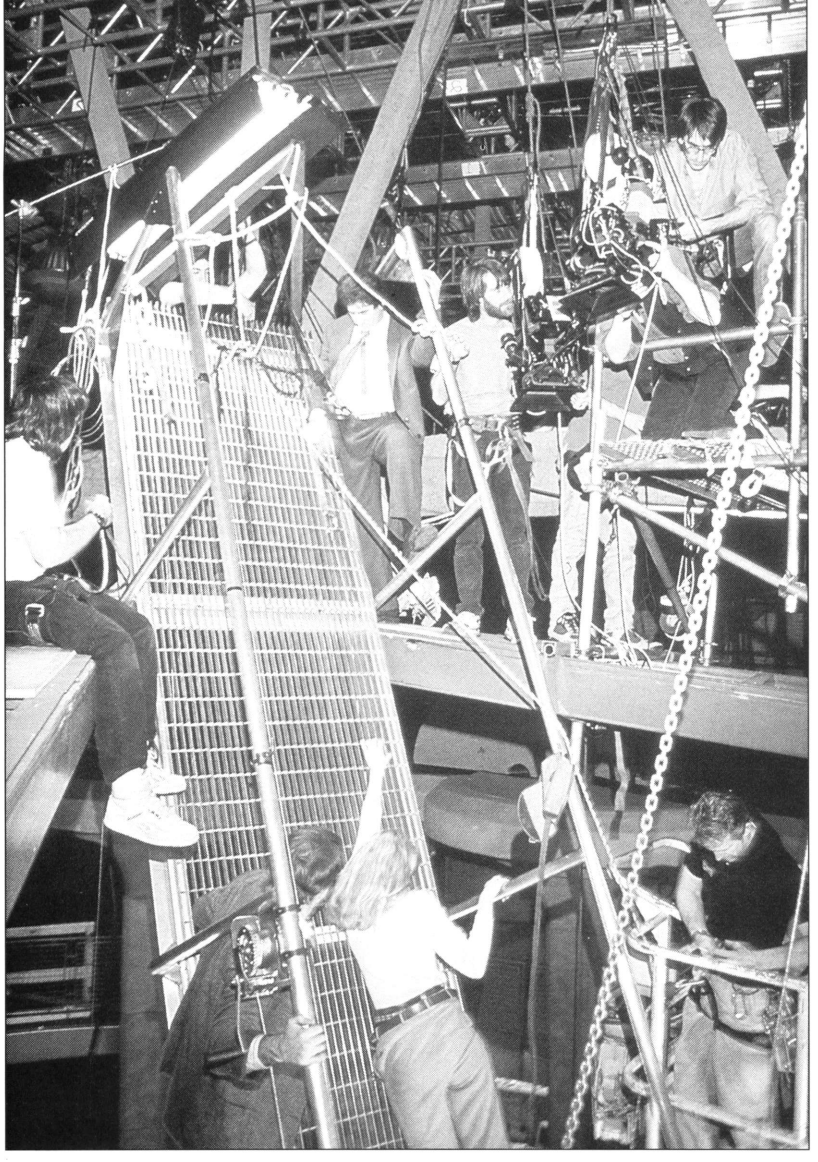
Lindley also tried to find a camera movement style that suited the action. "The film is a race between two reporters and a chase between them and the villains. Races and chases translate to faster dollies and quicker-paced blocking from the actors. I encouraged the director to keep this rhythm in mind throughout the shooting."

Principle photography began in Wisconsin in early October. The script called for an Indian summer look and the company worked in warm weather and autumn colors for a full week, ending indoors at the spectacular State Capitol Building in Madison. The huge ten-story rotunda was used as the background for a complex Steadicam shot that moved a full 360 degrees, around the entire building. Since the capitol has a dome and skylight, Lindley used the natural light for the wider shots and then re-created the light when the sun went down or moved behind clouds.

The train crash scene is the film's first large sequence and involves Brackett and Peterson's first meeting. Filmed in a remote location with no other light sources, the scene involved the aftermath of an accident and the set was designed with emergency and salvage activity that would light the scene itself. Most of the set was lit with sparking welding rods that were placed like lights by Lindley and his crew. The welding would appear in and out of frame and was the actual light used on the actors. The shooting was planned so that each night the company would look in a single direction, and generators, lighting cranes and trucks could be moved into position during the day.

Each action sequence in *I Love Trouble* had its own set of unusual problems. The elevator sequence was filmed in the 50-foot backlot elevator shaft at Universal (completely redesigned and rebuilt by production designer Dean Tavoularis) and on additional elevator cab and shaft pieces built and shot on the CBS Studio City stages. The Universal shaft had been built for *Sneakers*, which Lindley had also photographed, and his experience in lighting and designing camera rigs for that film proved invaluable to director Shyer. The biggest problem was getting the camera and an operator into the shaft and then being able to move

Opposite: ***A special aerial rig, capable of flying up, down, left or right, was used in the 60-foot-high "research farm" set. The first three floors of the set used gelled fluorescent lighting, and Lindley added additional practical lights to the ring over the desk.*** **This page:** ***Lindley (left) and director Charles Shyer line up a shot on location in Wisconsin. The company carried a Lenny Arm II with a remote head while on location in Wisconsin and Illinois.***



Working 60 feet in the air, Lindley (at upper left) looks for camera positions for his A and B cameras during prep for the complex catwalk sequence.

freely and easily for static angles and, more importantly, crane or dolly shots. Since most of the angles involved seeing all four walls, and the only practical working platform was at the top of the shaft, a conventional boom arm or crane could not be used. The problem was solved by designing the camera rigs into the set and disguising them.

Tavoularis' new shaft design incorporated a metal work ladder which was built by effects coordinator Stan Parks. The ladder rails were actually dolly tracks that held a special vertical dolly (all designed by key grip Herb Ault) that could run up and down the ladder. A remote head was mounted to the vertical dolly so that smooth dolly shots and a great variety of angles were possible while the crew remained at the top of the shaft. The power pod, as rigged, was able to pan, tilt, or rotate the camera as it moved up or down the vertical ladder. Dolly grip Rick Carden controlled the rise and fall of the vertical dolly from a counterweight system rigged outside the elevator shaft.

Lighting the shaft posed an additional problem, again based on the set needing all four walls. Lindley and Tavoularis worked together and designed practical incandescent 'work lights' in the shaft. One wall of the shaft was changed from concrete block to rippled industrial glass and the roof of the elevator itself was outfitted with KinoFlo fluorescent lights which lit up whenever the elevator moved. The glass wall allowed Lindley and gaffer Pat Reddish to pour warm colored light into the elevator shaft and change the patterns of light, making the single 50-foot section of shaft appear to be many different sections. The mixing of the colored light with the incandescent and fluorescent lighting provided Lindley with a change in look that gave the shaft greater visual variety and interest, while supporting the film's romantic theme.

Tighter angles, specific stunts and close-ups in the elevator with the principal actors were photographed on several smaller sets, each designed for one specific action. For example, the shot of Peter and Sabrina caught by the rising elevator cab (using Nolte and Roberts) was actually shot at ground level. The elevator cab roof was mounted on a forklift and the camera was handheld as operator Martin Schaer rose up on a dolly boom.

Lindley learned from photographing the cliff sequence in *The Good Son* that movie vertigo is different from real-life vertigo. "A high angle looking down might scare someone who's actually on location or in a precarious position, but that view doesn't always look scary on film. The views that give an audience the greatest feeling of vertigo usually keep gravity reversed," says Lindley. "On any shot looking up or down on a steep angle I try to turn the camera over on the lens axis. If gravity is going to pull something down in the frame, I try to rotate the camera so gravity pulls up in the frame or at least to the side.

"In our storyboard sessions I'd take the drawings and turn them upside-down to see if it helped. It's easier to turn a drawing over than to poke around with a camera 60 feet in the air. Some of our camera positions were so difficult to get to that we were glad just getting *any* shot. The planning of these weird angles made set-up time much faster. I didn't want the frame to have any 'floor.' I wanted the geography to be as disorienting as possible."

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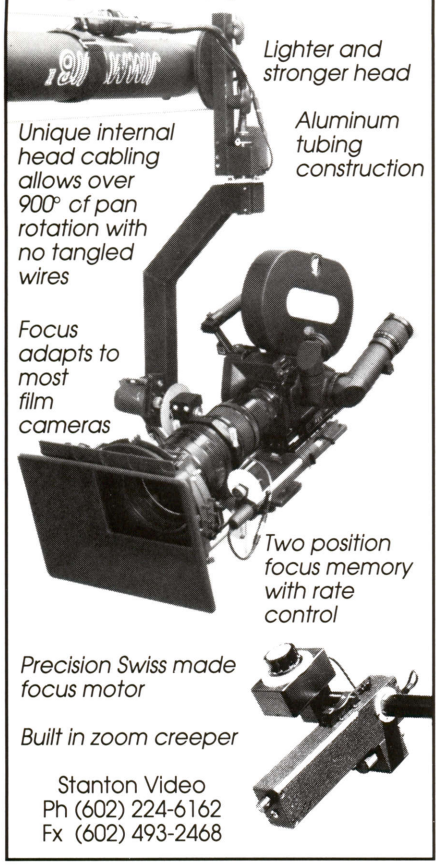

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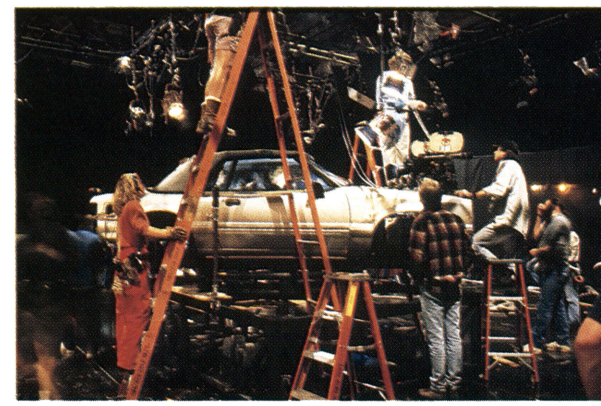

Right: ***The 360-degree turning car is set in place under a track-and-grid system used to propel lights and various grip-tricks past the stationary car, simulating high-speed movement.*** **Below:** ***On location in Chicago, the company sets up a large crane shot. A remote head is mounted on the Lenny Arm II, which is mounted on the end of a Chapman Titan Crane.***

Another complex sequence involved a car's high-speed rush toward an oncoming truck. The 60 m.p.h. sequence was written for night and in the rain, which meant that the actual stunt and background projection plates would have to be photographed in artifically-made rain on an unusually long stretch of highway. In addition, the first-unit photography with the actors had to match the very violent action of the second unit's car stunts. The plan was to have the first unit duplicate onstage all of the physical situations that would occur when filming this kind of sequence on location.

A specially designed gimballed rig was constructed that would tip the car forward and back 60 degrees, tip side-to-side 30 degrees and rotate it side-to-side 90 degrees. A second rig would turn the vehicle in 360-degree circles.

With the car mounted eight feet in the air over a water tank, Lindley, Ault and Reddish designed a track system above the car that carried moving lights, spinning coukalouris rigs and other grip effects to simulate the high-speed movement of the car. Ritter fans and rain bars duplicated the location rain and an 18'X24' projection screen carried the moving rear-projection background plates. Both the car on the gimball unit and the Panavision camera were each mounted on vibration platforms that could be varied depending on the intensity needed for the shot. Due to the large amount of water being blown all over the stage, rain deflectors were used on the camera, but the windshield and wipers on the car were run normally and backlighted to add to the overall visual effect.

Each shot in the car sequence was carefully choreographed with the actors, camera operators, electricians, grips and the special effects team controlling the car's hydraulic gimbal unit and the wind and rain machines. Many shots could use only one camera because of lack of room inside the car or angle of view on the projection screen. However, Shyer found that any second camera handheld close-ups gave great energy to the sequence and became useful cutting pieces in the editing room.

The largest set in the film (and one of the largest indoor sets in recent Hollywood history) was the Chess Chemical Research Farm. Over 60 feet high, the circular set had three floors that ran

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around a perimeter ring and, above a glass ceiling, two oversized levels that housed an open catwalk system used for the film's climax. To accommodate the height of the set, the wooden perms at the top of the stage were removed so that construction could continue up into the rafters. The on-camera ceiling over the actor's heads was the actual ceiling of the stage.

The glass ceiling of the farm posed a huge lighting problem. The script called for lighting changes during the scene and the staging of the action involved seeing the entire 360 degrees of the round room.

"I tried to confine most of the fluorescent look to the Chess Chemical sets to give them a colder, monolithic feeling," says Lindley. The first three floors of the research farm set were built with banks of fluorescent lights that were pre-gelled and given two separate circuits. One circuit was a deep blue and the other was a more normal white light. Each circuit and each section on each floor could be controlled remotely by the electricians. In addition, two large 20'X40' soft boxes with the same blue and white circuitry were built and hung over the set to provide general light for the main floor action. Glass panels in the ceiling were removed to allow motorized chain winches to quickly raise, lower or remove the soft boxes between setups without any loss of company time.

"The research farm was so large that I had 150 separate instruments working, sometimes more," says Lindley. "The depth of Dean's set, its height and overall size meant that some lights were six stories up over a glass ceiling or hidden deep in an alcove on the fourth floor. Even with ten electricians, I'd never be able to really have control of the lighting without using dimmers. How can you quickly drop a scrim in lights so far away? And what if you want to drop the intensity a quarter stop or two stops? The dimmers made all of these changes quick and easy. The rigging time was longer, but the time between setups, which is the most expensive time, was short."

Many cameramen shy away from dimmers, but Lindley finds they have their uses. "When I went to film school years ago, they told us that we needed color temperature meters to make sure every light was exactly 3200 degrees Kelvin. Nothing in the real world looks that way. By taking a light up or down on a dimmer I can add a new perspective to the light. As it dims down, it will also get warmer, which might bring the object it's lighting closer in its perspective. Brighter makes it bluer and it might actually recede a bit. Dimmers gave me a subtle control that makes wire scrims or nets seem crude by comparison."

The complexity of the set mirrored the complexity of the action on the various set levels. Remote arms, special aerial rigs, scissor lifts, Chapman cranes, and construction crane arms were used to properly place the camera, which was often 40 feet in the air.

The final action sequence of the film takes place above the glass ceiling in the research farm on catwalks about 60 feet above the stage floor. It was decided that the catwalk sequence would be done without any bluescreen composite photography or trick shots in order to allow Lindley greater freedom with camera movement, lens choice and lighting quality. It would also give the sequence a more believable look and would use the real actors in visually dangerous positions.

All of the wider shots with Nolte, Roberts and the stunt doubles were made on stage with the actual 60-foot drop below them. To help coordinate the shoot — working in an open space, above glass, 60 feet in the air — Lindley asked aerial rigger Earl Wiggens to supervise the camera mounts and operator working positions. Key grip Herb

Ault and Branham Associates designed an overhead pipe grid system that bolted into the remaining stage trusses and held all of the lighting, grip equipment and the catwalks used by the actors in the scene. Wiggins (a veteran of *Cliffhanger* and Lindley's *Good Son*) has developed platforms and mounts that attached to this grid and allowed handheld or moving cameras in any position over the catwalk and glass ceiling.

Although Shyer, Lindley and co-producer Bruce Block storyboarded the entire film, the catwalk sequence required special attention because of the phases in which it had to be shot. First, the principle actors performed the scene on the catwalk, during which time all wide angles and tie-ins to the stunts were photographed. Meanwhile, an exact duplicate of the catwalk was being built six feet off the ground. In phase two, all closer angles were shot on this lower set, which not only allowed the actors to work in a safer, more relaxed environment, but also allowed the crew to work faster and make shots that would be too difficult working so high in the air and above glass. Phase three would mean a return to the real catwalk but with one change: the catwalk was repositioned in a vertical hanging position over the set and the final climax would be played out with the actors hanging out over the real set floor. The next stage in the catwalk filming was to return the catwalk to its normally horizontal position and play the entire action with the stunt doubles. The final phase used stunt doubles in the execution of the film's climactic stunt.

Shyer feels that the visual quality of the film found an excellent balance between high-tech action and the important romantic quality that the script presented. The variety in the visual quality brings the script to life in a way that merges the "thriller" with the "romance."

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The Wisconsin Film Office would like to thank Touchstone Pictures (in association with Caravan Pictures) for shooting their new film "I Love Trouble" on location in the Badger state. Congratulations to co-stars Julia Roberts and Nick Nolte, screenwriter/ director Charles Shyer, screenwriter/ producer Nancy Meyers, co-producer Bruce Block and all the other trouble-shooters involved in this fine production.

Wisconsin Film Office

When the name of any cinematographer comes up as a candidate for an assignment, one question follows immediately: "How fast are they?" In most cases, an accurate answer is not quite so simple.

Directors of photography carry a load of responsibilities as variegated as they come. The artistic and technical aspects of the work, often dissected in these pages, are made possible only by an inordinate amount of careful planning and plain hard work. To coordinate and lead the efforts of a crew of people is an easily derailed endeavor; the making of a film also requires diplomacy, honesty, patience, and insistence on excellence.

This "other side" of the director of photography's work was much on the mind of Stephen Burum, ASC during a recent interview.

"People understand about the art and the light and how you choose the style," says Burum. "That's been talked about a lot more eloquently than I can talk about it. It's difficult to say anything that really means

Shedding Light on *The Shadow*

Cinematographer Stephen Burum, ASC discusses the logistical, administrative and organizational requirements of a big-budget production.

by David Heuring

Photos by Ralph Nelson

Opposite: ***Alec Baldwin in his first hero shot as the title character, photographed on a stage at Universal.*** **Above:** ***The lovely (and hypnotized) Margo Lane, portrayed by Penelope Ann Miller, pursues Lamont Cranston.***

Directed by Russell Mulcahy
Produced by Martin Bregman, Michael Bregman, Willi Baer and Lou Stroller
Director of photography, Stephen Burum, ASC

anything unless the listener has really done it in depth. Everybody is anxious to do the work, which they perceive to be photographing the picture. But in order to photograph the picture, you have to get everyone and everything in position to make the shot. It's like waging a war."

Burum should know. A third-generation Californian, he became a director of photography in 1964. His versatility is well-known, encompassing wildlife films, fantasy (*Something Wicked This Way Comes, The Bride*), special effects (*Cosmos*), streetwise realism (*The Outsiders, Rumble Fish*), and the horror of war (*Casualties of War*, and second-unit work on *Apocalypse Now*). Burum has earned an Os-

Above: ***Burum's firelight adds warmth to a romantic scene between Cranston and Lane.*** **Right:** ***On the Universal backlot, Baldwin is sprawled on a platform built specifically to achieve a dramatic low angle. Burum (in cap) shares a laugh at his expense with Miller (right).***

car nomination and an ASC Award for *Hoffa*, along with ASC nominations for *War of the Roses* and *The Untouchables*.

It's obvious from the deliberate way the mild-mannered, bespectacled Burum speaks that he's used to expressing himself in a very clear and careful manner to avoid misunderstandings and obviate the need to repeat himself. "Simply put, you don't want to go around all day solving mechanical problems," he says. "You want to foresee them, and solve them ahead of time.

"*The Shadow* is a good example of the whole spectrum of situations, because we did some of the material on a studio soundstage with sets; we did some of it on the backlot at Universal with sets; we did some of it on locations here in town that were interiors, like the Pantages theater, where we had to be very careful not to wreck anything; and we went into locations and modified the structures. So you had the gamut from a very controlled situation to a situation that was much more challenging."

With practicality the watchword, we start at the beginning: "No matter how many times people have said this, I'm going to say it again," Burum states determinedly. "The most important thing is preproduction — to choose the right locations, to choose the right time of day, and to let everybody in every department know what you need to do to make the movie work."

That said, let's take the first situation — the controlled conditions on a studio soundstage — and enumerate the concerns of the professional cinematographer. "First, of course, you talk to the director," Burum begins. "You talk to the production designer, you talk about the script. The production designer comes up with sketches. You talk about the sketches, and you finally agree on something that you all think is going to be great.

"Now you have to get a stage that is going to take this set. And there's never been a soundstage built that's big enough," he chuckles. "No matter how small the set, somehow the stage is not quite big enough. Modifications must be made. On a major lot, there are always scheduling problems to deal with. How many days will it take to build it, to rig it, to take it out, how long will you need it?

"Sometimes people are given stages that are much too big for what they're doing — for various reasons — and that leaves you with a smaller stage. So it's always good to walk around the lot and see what other people are doing. I've worked on shows — *The Shadow* was not one of them — where, unbeknownst to the studios, the producers would trade soundstages because it better suited their circumstances."

In the expensive, high-pressure world of filmmaking, a straight answer is as good as

In a dream sequence, Margo is consumed by fire in a Tibetan temple.

gold. Confrontation-averse people need not apply. "You learn to solve problems very directly," says Burum. "A big layer of middle management is counterproductive. You should be able to go and speak to somebody one-to-one and get things done. Things need to be expedited. The more informal things are, the better.

"This informality requires that when somebody says something, they keep their word," he cautions. "So when you say to people, 'This is what I want to do and how I want to do it,' you'd better be sure of what you're saying, because it impacts everybody."

Once the stage has been chosen and reserved and the plans agreed upon, the production designer produces a spotting plan, a graphic description of the set placement on the stage. The director, occupied by acting and story concerns, is generally not a party to these arrangements. "It's one of your jobs to make sure it all works mechanically," explains Burum.

Take catwalks, for instance. The cinematographer must ask (and answer correctly) the following questions about this seemingly minor consideration: Is it economically feasible? Will we be on this stage long enough to amortize the cost? Will it give you a mechanical advantage? Is it going to make things go quicker for you?

"If the answer to all these questions is yes, you order catwalks," says Burum. "You have to make an economic judgment, an artistic judgment, and a mechanical judgment. Then you have to decide where the catwalks are going to be."

Once the catwalks are in place, the construction foreman begins to build the sets. "You talk to the production designer, and you talk to the construction foreman. Once things are up, they look a little different than in the plans, and everyone makes a couple of little adjustments. You always have to have yourself available for those adjustments. It's better to do them while you're building than to have to tear out a wall later."

Opportunities for improved efficiency often present themselves at this time. "You want to go in early, when the construction crews come in, and walk around, meet and greet, have a cup of coffee, say hello to people, and see if anyone has any questions. Then at the end of the day, you want to do the same thing before the construction people go home, because they may want to order something and start it early in the morning. And when the sets are being painted, it's good to drop by and see that the colors chosen from the swatches look good on a bigger scale.

"The construction foreman might say, 'It will save me a lot of money if we don't have to move these steps. It's much easier for me to build them this way.' And you look at it, and think about it, and you say, 'I think that's OK,' or 'It's very important to have it this way,' in which case they'll spend the time and the money to do it."

Burum pre-empted sev-

eral potential time-eaters during his morning walk-throughs for *The Shadow*. "In the temple, we had a lot of intricately detailed gold-leaf work which was not showing up. So I was able to ask a production painter to go in with a darker gold and line all the crevasses. This is obviously preferable to walking onto the stage during production, turning on all the lights, and suddenly saying, 'Gee whiz, why don't those gold things show up? Let's get the standby painter here, and fix this.' Then you're losing shooting time."

After the sets are in place, they are invaded by the set dressers and the electrical rigging crews. "When you're ready, you get together with the gaffer, the rigging gaffer, the rigging best boy and the regular best boy, and you walk around the set, and you decide roughly where you want to put up which lights. You have somebody write those instructions on the beds with chalk: 2K, 5K, 10K, whatever it is. And while you get it all laid out, you talk about your strategy. In this one I used a lot of hard light, and when you use a lot of hard light, you have to use a lot of grip equipment, to flag it and make shadows, etc. In this case, instead of the grip equipment I used a lot of snoots, a much simpler solution to our light control problem."

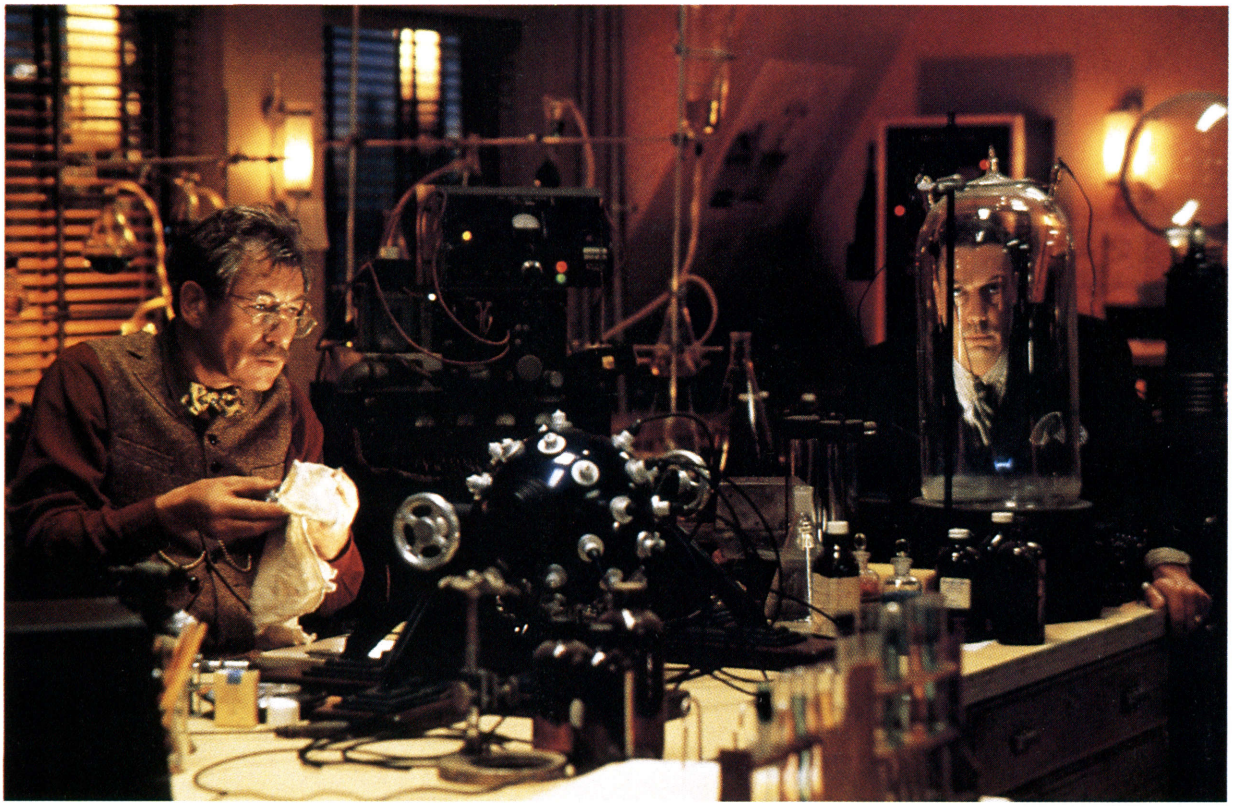
Enter the lot best boy, the liaison between the crew and the studio equipment department. "Nobody really understands what the best boy does," Burum gripes. "The second man in any organization is an incredibly important and often underrated position; they don't get the credit they deserve. The best boys with the electricians and the best boys with the grips have two responsibilities, and they are administrative responsibilities: first, to make sure that the equipment is ordered, received, and counted, and that it works and is returned in good order. And second, if you order people, [make sure] that they are there, and that their time cards are filled out and that everything is in order so they can be paid.

"The studio provides an extra best boy to look after their equipment, but more importantly, this is someone who knows where everything is. Usually, they've been there for years. You might say, 'You know, I was looking around and I saw this thing. . .' and he'll know exactly what you mean, where it is, and how to get it."

Running an average studio feature film costs roughly $8000 to $15,000 an hour. Burum takes a look at that river of cash flow through the eyes of a producer: "To a producer, that money is already spent. He'll say, 'I have allocated that amount of money over so many days.' If you save one or two hours, the producer doesn't see that, in a bean-counter sense, as having saved him $30,000. But in a real sense, if you can get yourself two hours ahead of the game, or maybe a day ahead of the game, it can be invaluable. Also, by solving mechanical problems before you start shooting, you buy the most important thing of all: acting time.

"On *The Shadow*, the first two weeks we had a very tight schedule," he offers. "We had two Tibetan temple sets, and we had a large 1930s nightclub. We rigged and lit all that first, during preproduction. When we came in the first day, it was literally a matter of an hour to the time we went to roll camera. If you had to bring everything in, put everything up, and run cable, it could take five, six, seven hours. To just walk onto a set, have it all ready,

Below: ***John Lone, bedecked in a spectacular costume, plays the Shadow's nemesis.*** **Right:** ***Burum made visual connections between scenes and characters through the use of shadow patterns.***



Elaborate production design is enhanced by foreboding source lighting.

and do it — it's just psychologically a good thing to do.

"You always like to try to get ahead [during] the first two weeks, because then the studio knows that everything's working and they relax. It takes everybody a little time to learn the job. Everybody assumes that all movies are kind of the same, but they're not. You have to learn every show. Every combination of people is different and you have to learn how each system works."

Every director is different, as well, but certain consistencies in the division of duties remain. The director's main concerns are the actors and the story. "One person can't do both the director's and the cinematographer's work," Burum avers. "It's too much. The director should not be thinking about the mechanical details."

Keeping the wheels of production turning smoothly is also the purpose of the rigging crew, which usually consists of electrical and grip crews. While the show is up and running, the rigging crew goes ahead and sets up the next set according to the instructions of the cinematographer. "Either first thing in the morning when you come in, or at noon after dailies, or after work, you go to the stage with your key grip, his best boy, the gaffer, the electrical best boy, and the rigging grips and the rigging electricians, and talk about what you're going to do. Sometimes they'll rig it in the middle of the night if it's going to conflict. Or they may be doing it next door while you're shooting.

"All of this administrative stuff goes on while you're shooting the picture," Burum reminds. Needless to say, one needs people who can be counted upon to understand and execute the wishes of the cinematographer. "Often, the rigging can be done by just two people. You always try to send people out in pairs — never send one person anywhere to do anything," he advises. "Two people can do much more than one person. Somebody always has to climb a ladder or something.

"This also applies when you're going out of town on a location picture. It is critical that you have two people you know well in every department," insists Burum. "It's very important to have someone who can stay with you and somebody who can do the rigging. And it's very difficult to work somewhere where people aren't used to doing feature films, no matter how nice people are or how eager to help. Experience is a big thing."

Burum also has some advice about on-set politics and petty personality clashes. "Anytime you get more than two people together you have to worry about these problems. You have to be honest and forthright and fair, and you can't stab people in the back. If you say, 'I want you to take the effort to put a light on top of this building,' you'd better damn well use that light. Otherwise those people begin to think they're not worthwhile, and that you don't know what you're doing. It's just bad leadership. You don't want to waste your people, and you don't want to waste your equipment.

Burum's Visual Approach

Two separate Tibetan temple sets were built for the shoot, with Burum participating in their design and construction.

Years ago in the Orient, the Shadow, who aids the forces of law and justice, learned the secret of how to cloud men's minds, so that they cannot see him. His friend and companion, the lovely Margo Lane, is the only person who knows to whom the voice of the invisible shadow belongs.

The Shadow made his first pulp fiction appearance in 1931, and 325 more dime-novels were mined from that productive vein before 1949. The radio show began around the same time, as an episode of "The Detective Story Hour." An interesting footnote for film fans: during the fourth season of the radio show, the roles of Lamont Cranston and Margo Lane were played by Orson Welles and Agnes Moorehead.

Stephen Burum can remember hearing the signature laugh over the radio as a child, and that memory played into his approach to photographing the feature film version, which stars Alec Baldwin in the title role and Penelope Ann Miller as his lovely assistant.

"I only heard *The Shadow* on the radio," recalls Burum. "The comic books came later. So I said to myself, 'If I were 8 years old again, and I were listening to this, what would I imagine in my mind?' Instead of using the comics as a style base, I wanted to remember what it was like to be a little kid listening to the radio and imagining what was going on. Whatever that style is, that's what I did," Burum chuckles. "I didn't try to synthesize, or ask 'What does the art on the cover of a pulp novel look like?' All of that's already been done.

"They had done the darkening of Batman, which was a brilliant design idea, but I didn't want to do that," says the cinematographer. "Instead, I did a hard-light picture, because it's about the Shadow and it's about casting shadows. So I lit basically very flatly, with a lot of shadow patterns. I would have recurrent patterns — like the Oriental pattern that you see in the Tibetan scene — and I would just project it on a wall somewhere. You see the pattern on a wall in New York later, in a scene reminiscent of that, so you sort of have the spirit of his time in Tibet following him. It was a visual allegory."

Light and shadow played an appropriately crucial role in the film. "There's a scene in which Lamont Cranston needs to convince his uncle, the police commissioner (Jonathan Winters), that the Shadow isn't worth an investigation. Lamont goes into what I would consider a 'semi-clouding' of a person's mind. He doesn't completely disappear. He's doing something suggestive. So I wanted to do something visual to suggest this. They're in a nightclub and there are shadows around, and I just had Alec lean back, out of the light and into silhouette. And then he says, in the Shadow's voice, 'There is no shadow.' We cut to Jonathan Winters, and he repeats the line. When he's through, he leans forward and comes out of the shadow. That was a very simple thing. We didn't have to do any fancy effect, and yet it works very well."

Projected shadow patterns reminiscent of Lee Garmes' slashing diagonals in *Scarface* (1932) show up throughout *The Shadow*. "When Lamont and Margo get together for the first time and have dinner, I put these little shadows on their faces — a similar one on both of their faces; again, [to provide] a visual allegory that they were kindred souls. The idea is that she understands things about him — not intellectually, but in a spiritual way. So it was a visual way of presenting these people, and symbolizing their bond." — DH

Burum's careful planning and advance troubleshooting techniques paid off on huge, complex sets like this 1930s nightclub, where snoots on all lights saved time and equipment without sacrificing control.

"There are always times on a picture when you have to ask people to go above and beyond, and you never want to waste that ace in the hole," counsels the cinematographer. "If you continually burn people out, you won't have them at their peak."

On the subject of interpersonal tensions — not a minor consideration during the marathon pressure-packed days on the set — Burum repeats the mantra of a former silent editor and director who taught him at UCLA: "Miss Arzner always said that 'ladies and gentlemen make motion pictures.'

"The idea is to never let anyone get to the point of cracking," Burum explains. "You have to understand the other person's problem. Everyone on a motion picture set thinks their job is the most important and the hardest — *and it is.* And you have to give that to them. You cannot have a person lose face or lose their pride. It is disastrous. We can't afford petty bickering and carrying on. Everybody's trying to do the same thing. Most of the time when people wrangle or fight, it's not out of pettiness or stupidity, but because they want to do the best job they can and they feel they're not being allowed to do so."

Also, according to Burum, it's important to remember that there's no such thing as a completely smooth production. "Whenever you see somebody else's movie, you think, 'Gee, what a great job so-and-so did, and it's flawless, and it looks like they had no trouble at all.' And you say to yourself, 'Some days are like a bloodbath. Every day there are problems.' Well, the truth is everybody has those problems every day, and you just have to get through them the best you can."

Crew interaction is not the only aspect of the cinematographer's work where a degree in psychology would come in handy — there's also the cast. From the actor's perspective, feeling comfortable and confident is an important part of giving a good performance, and the cinematographer's role is again crucial. According to Burum, it begins in the prep stages, with tests. "Testing is important, for costumes and especially for makeup. We have had many changes in emulsion in the last ten years, and there is no longer a makeup base made that is color-corrected for films. So everyone has their favorite makeup that makes them feel good. Let's say you've got two very beautiful women in the picture. And you shoot them together, and suddenly one woman looks wonderful and the other looks green.

"If you can shoot a test and see that it's not balanced correctly, the makeup people can fix it. They say, 'We'll put a little bit of this color in, and we'll color-correct this so it looks right.'

"In the case of *The Shadow*, I had just worked with Penelope Ann Miller on *Carlito's Way*, so I knew she has a very yellow skin. I discussed it with Ronnie Spector, the makeup person. We put some blue in her makeup so her face didn't look so yellow, and we made her hair a little redder. She now has a little

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pink tone, which is complemented by her hair color — she looks terrific. People will be stunned by how sexy she is. But you can't do that without a test."

Turning back to the set, Burum relates a few of the considerations involved in another practical situation: a location in which some limited construction is possible. Location scouts know the cinematographer's primary concern — high ceilings and areas to hide lights. "You want to be able to keep the lights out of the way, so you want something that has a high ceiling," Burum says. "There are two very bad situations in locations: hallways and stairways. Usually you see all the surfaces. You have to either light the walls and let the people go in silhouette, or you have to put in some sort of physical restricters to hide the lights.

"In *The Shadow*, we used a hallway down at the old Pacific Electric building. The production designer put in false headers to hide the lights. When you do something like that, with a real ceiling, you have to be able to hide the cables, and when you shoot back in the other direction, you have to take all the lights and flip them to the other side of the headers, which is time-consuming. It's very important to sequence the work. Often you'll have to go out of order, because it's so time-consuming to change things around.

"The perfect plan will have you flipping the lights just once; twice is more realistic. It's ideal to have the rigging crew come in and flip them while you're at lunch, so you don't have to deal with it. You want to keep as much work off of the shooting time as you can. If you can't have it done at lunch, try to have it done ahead of time or first thing in the morning, or stay the extra hour. All of that stuff pays tremendous dividends. An hour of overtime can save you half a day's shooting. And sometimes an hour's overtime can make the difference between moving from one location to another.

"People who do television series and movies of the week are masters of this moving and prerigging. That's where the prerigging is so important, because you literally do not have any time. I've always felt that the faster you have to go, the better people you need."

Perhaps the most important item on the cinematographer's long list of necessary skills is the most difficult to describe: leadership. "I remind myself to keep everyone involved in the problem-solving," reveals Burum. "That way you don't lose anyone. You have everybody thinking about the problem. If you solve every problem yourself, and you tell them how to lay the dolly track, then you're not using them. You want to hire great people who have great ideas and experience. I used to love my old key grips who had been working in the business since the Thirties. The only way you learn is by knowledge being passed down. That's how any art form becomes better. You can't think of everything yourself. It's so important to have people you can ask, with confidence, 'What do you think about this idea?'

"People have to be proud of what they're doing," the cinematographer concludes. "It's the thing that makes everybody want to come back and work these long days. Part of your responsibility is to help this. This is very, very hard work. You are on all day. But if you love what you do, all of that other stuff goes away. If you had to do my job as a job and you didn't love it, believe me, you would be in face-down hysteria."

Space considerations prevent the inclusion of Stephen Burum's practical advice regarding the angle, intensity and direction of the sun. Watch for this advice in a upcoming issue.

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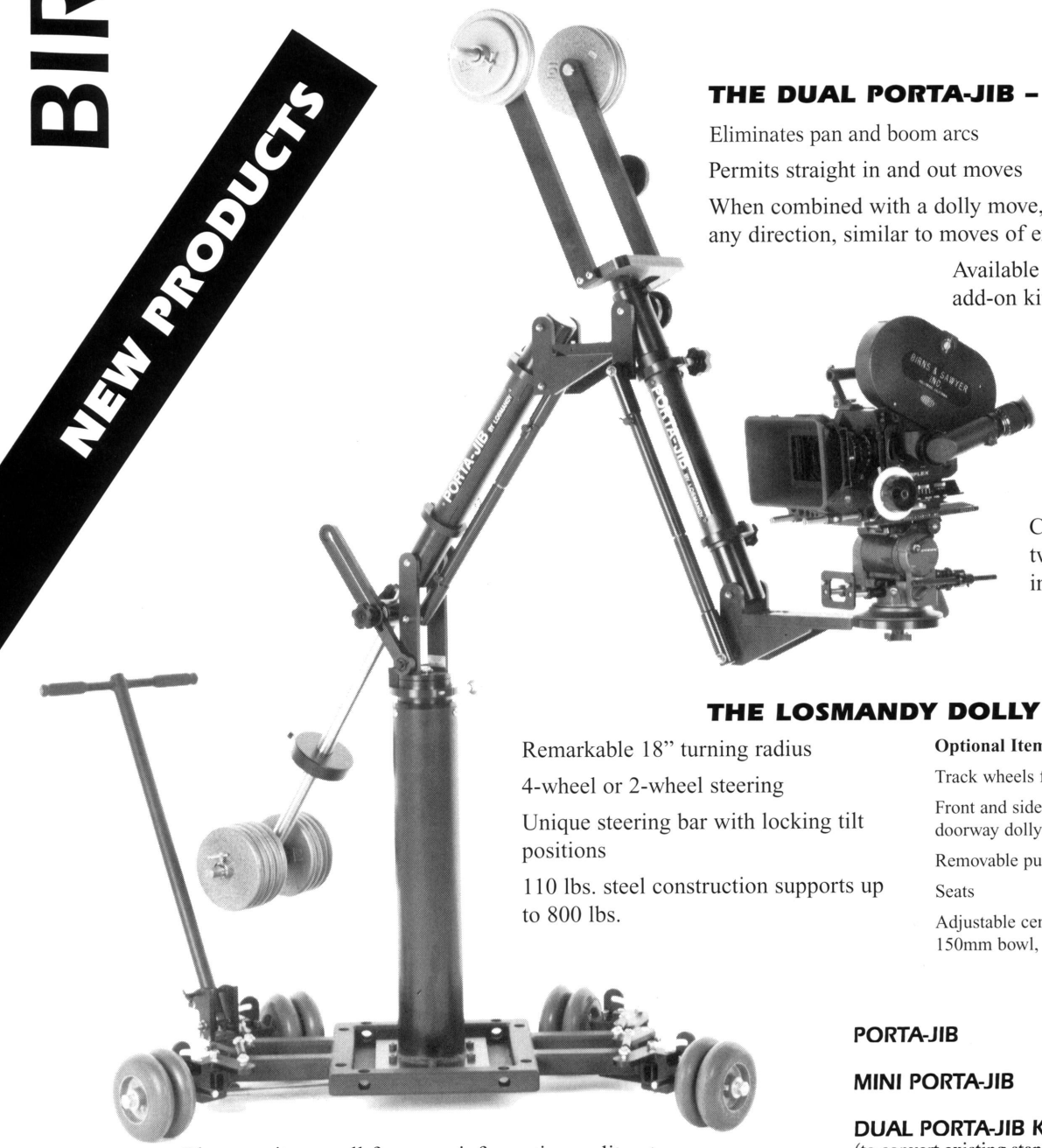

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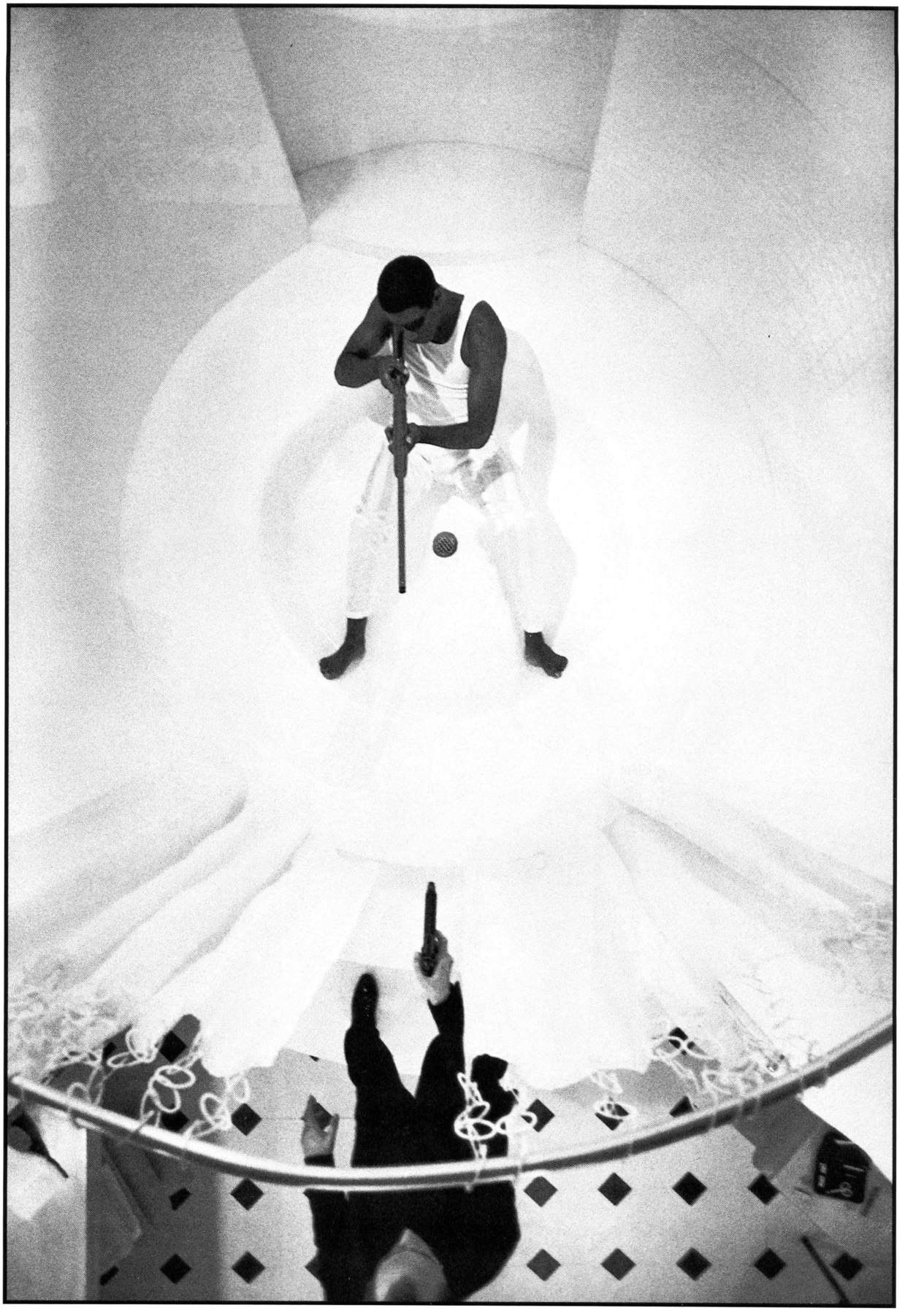


Suture: A Balancing Act in Black & White

Art thriller's striking black & white photography sews up Sundance cinematography honors for Greg Gardiner.

by Stephen Pizzello

It would be hard to imagine a harder sell than the script for *Suture.*

For starters, there's the story: Vincent Towers (Michael Harris), an ambitious but amoral businessman, meets his long-lost half-brother, Clay Arlington (Dennis Haysbert), at the funeral of their recently murdered father, a prominent pillar of Phoenix society. Following the funeral, Towers invites Clay to his home for a visit, ostensibly to renew the pair's family ties. After the well-meaning but naive Clay arrives, Vincent, the prime suspect in their father's murder and a less than hospitable host, arranges to have him blown up in a rigged car. When the car explodes, Clay is wearing Vincent's clothes and carrying Vincent's identification; since the brothers look so much alike, Vincent assumes that Clay's blackened corpse will be mistaken for his own, allowing him to skip out of the country with his newly inherited fortune.

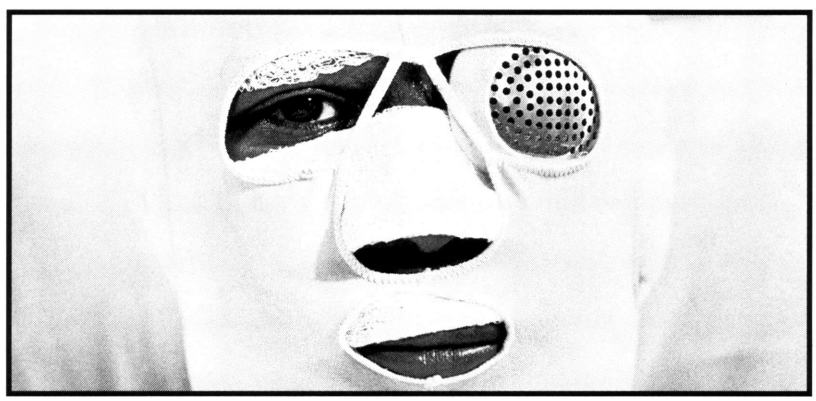
To Vincent's chagrin, however, Clay survives the attempt on his life. Stricken with amnesia and horribly disfigured, Clay is admitted to a hospital, where a pair of doctors attempt to piece together his fractured body and mind. Working from photographs and videotapes of Vincent, a beautiful, expert plastic surgeon (Mel Harris) succeeds in restoring his features; Clay then begins working with a psychoanalyst (Sab Shimono) who mistakenly tries to jog "Vincent's" memory.

Got all that? Good. Now consider that Vincent and Clay, the supposedly identical brothers, are played, respectively, by a slim white actor and a hulking black actor who look nothing alike. To top things off, this surreal cinematic mélange was shot in widescreen black & white, by a pair of filmmakers with no prior experience in features.

If you're convinced by this point that Hollywood would never bite at such a lure, you're right. *Suture* eventually made it to the big screen only because its novice directors, Scott McGehee and David Siegel, were determined to see their concept through. The San Francisco-based duo, who had been earning their living as waiters, financed the film through a California Limited Partnership they cobbled together with the help of family members and friends. The money they raised was sufficient for shooting and a first edit, which didn't leave much room for error. But the uncertainty of the venture was balanced by the involvement of accomplished actors like Haysbert, Harris and Dina Merrill, as well as highly regarded independent filmmaker Steven Soderbergh, who signed on as executive producer after the film had been completed.

To be accurate, of course, one must note that McGehee and Siegel had more than a wing and a prayer on their side. Prior to setting their sights on *Suture,* the two had collaborated on a pair of promising short films. The 37-minute, 16mm *Birds Past* (1989), a comic homage to Alfred Hitchcock's *The Birds* that combines color and black & white stocks, was the Grand Prize Winner at the 1990 Utah Short Film Festival; the filmmakers' followup, the 22-minute *Speak Then, Persephone* (1990), also mixes black & white and color as it follows the adventures of a young student immersed in San Francisco's underground art scene. Both films were selected as Program Headliners at the San Francisco Arts Festival.

McGehee and Siegel's striking visual style stems from a variety of influences. The former has a BA in English Literature and a Master's degree in Rhetoric, while the latter has a BA in Architecture and a Master's in Fine Arts. Both, however, are



Opposite: ***Clay Arlington (Dennis Haysbert) faces down an assassin in a white-tiled tub. In this shot, Gardiner sought to achieve glowing whites without destroying the overall image.*** **This page:** ***Swathed in bandages after the attempt on his life, Clay confronts the loss of his identity.***

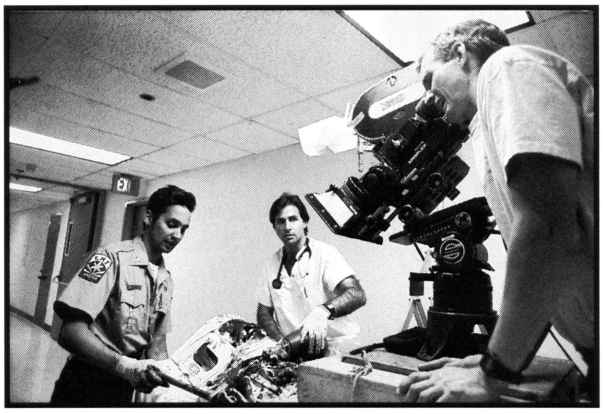
Produced and directed by
Scott McGehee and David Siegel
Director of photography,
Greg Gardiner

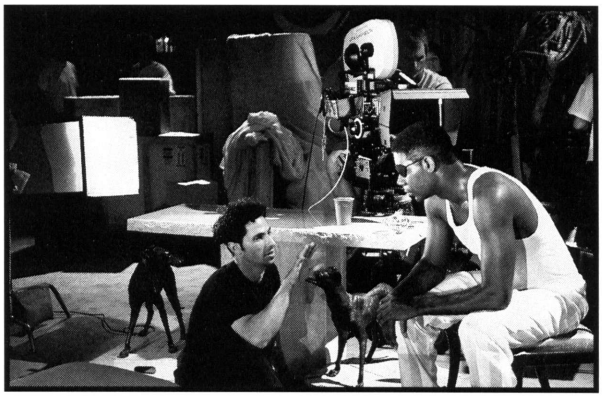
bona fide film lovers. The influences visible in *Suture* include Hitchcock's psychological romance *Spellbound;* mid-'60s paranoid thrillers such as Edward Dmytryk's *Mirage,* John Frankenheimer's *Seconds* and Hitchcock's *North by Northwest;* and such Japanese thrillers as Akira Kurosawa's *High and Low,* Hiroshi Teshigahara's *The Face of Another* and Yoshitaro Nomura's *Tokyo Bay.*

In order to bring these inspirations together in a seamless way, the directors sought a cinematographer with a kindred spirit. Enter Greg Gardiner, whose background includes both obscure indy projects and big-budget thrill-films. While pursuing a Fine Arts degree at UC Irvine, Gardiner found a mentor in renowned black filmmaker Carlton Moss, who had made his mark working on the *Why We Fight* series and black orientation films during World War II. Moss encouraged Gardiner to shoot his own 16mm film, and then gave his young charge work as an assistant on educational short films about African-American subjects.

After graduating from UC Irvine in 1976, Gardiner worked on several projects with New York-based avant-garde filmmaker Jon Jost, and then spent 10 years working as a best boy and gaffer (during that span, he toiled on five Roger Corman pictures, as well as *Repo Man, Walker, To Live and Die in L.A.* and *Paris, Texas,* among others). After working through a difficult transition period from gaffing to camera, Gardiner eventually landed a job as second-unit cinematographer on the television show *The Flash,* and later assumed the first-unit chair for six episodes before the show was cancelled. Since shooting *Suture,* Gardiner has taken the reins as director of photography on the action-oriented TV show *Viper.*

Explaining the seemingly incongruous mix of titles on his resumé, Gardiner says, "I'd describe myself as an art aficionado and an action junkie. That's why, in one year, I can shoot both *Viper* and *Suture.* I've always been motivated by genres, stories and visuals, and I love cinematography. For example, *The Piano* blew me away; it was just a total creation. But on the other hand, I think *Lethal Weapon* is a brilliant film and a wonderful piece of visual filmmaking. *Suture,* of course, is an art film, influenced by filmmakers like Kurosawa and heavy on the visual style."





Above: ***Cinematographer Gardiner homes in on Clay's bloodied features, as an EMT (played by co-director Scott McGehee) and a doctor wheel their patient to the operating room.*** **Right:** ***Co-director David Siegel coaches Haysbert.***

That style — a juxtapositioning of flowing camera movements and stark, severe compositions that incorporate postmodern architecture and the spare, open landscapes of Phoenix — earned Gardiner the Best Cinematography prize at this year's Sundance Film Festival. "Honoring *Suture* for its cinematography was an honor for the film itself," he says. "In essence, visual style is the heart of the picture."

When asked to explain the film's central conceit — the white/black casting of the "brothers" — Gardiner says that the tactic was adopted as both a design element and a symbolic comment on the nature of identity. "Scott and David are very strong visual filmmakers, and the casting was another aspect of the film's look," he says. "The choice of black & white widescreen was based upon the style of Sixties Japanese films. From a photographic perspective, of course, you can't have anything worse than Dennis Haysbert in a white suit! The look of the film has been referred to as film noir, but it's really not. Three-quarters of the film is a layering of white on white; the images are evenly lit, but they're not flat. Black & white needs to be treated so that you are really lighting everything in the frame, except what you want to have go black. You have to bring the tonalities out. This film is really lit across the frame, with elements depicted constantly in their tonality. Really, *Suture* is the *opposite* of film noir, except for its climax, which has a similar sort of [noir] richness. I stretched the entire scale, but we were working towards glowing whites."

The filmmakers considered shooting in anamorphic to achieve their widescreen compositions, but settled on Super 35 when they had trouble getting their hands on anamorphic equipment. "Panavision did us

toby phillips on film:

"There are some things that can never be fully explained. Sometimes you just know in the essence of your being that something is going to touch the audience. Today, I direct and shoot commercials. But I still shoot some music videos because it's always been a place where you can stretch the boundaries…go to the edge and see if you can do something you haven't done before. Film is totally malleable today. There are almost no limits. Sometimes the most subtle visual nuances have a depth that is indescribable. I took my first picture when I was eight with a plastic camera that was a gift from an aunt. It was pure magic. I still feel that same passion today. I'm sure that feeling will always be with me."

Toby Phillips is an eclectic filmmaker with hundreds of TV commercial credits as a director-cinematographer for Toyota, Cadillac, Sea World, Saudia Airlines, the U.S. Postal Service, and others. He once photographed six of the top 10 videos on MTV in that week. His Steadicam credits on features include "Mad Max: Beyond Thunderdome," "The Bounty," "Born on the Fourth of July," and "The War of the Roses." And he was the director of photography on "Truth or Dare."

Photo: © Douglas Kirkland, 1994. © Eastman Kodak Company, 1994.

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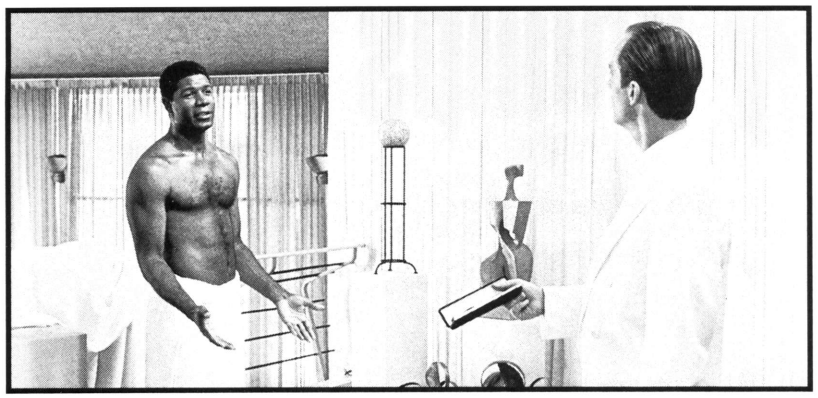

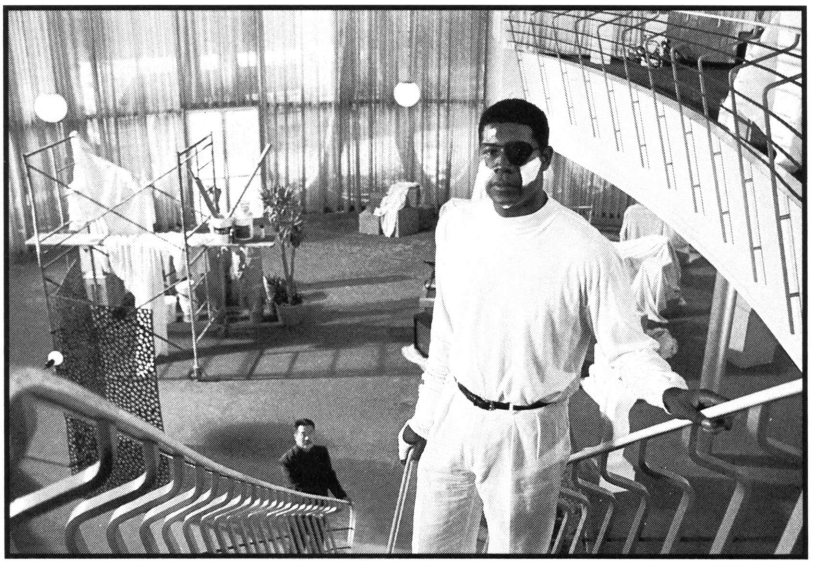

Top: ***Clay and his brother Vincent (Michael Harris) have a brotherly discussion in the latter's postmodern, predominantly white apartment.***
Bottom: ***Clay and his psychiatrist (Sab Shimono), visit Vincent's apartment in the hopes of piecing together the past.***

phenomenal favors," Gardiner notes. "They were very supportive of the script and the filmmakers. I'd operated on a few anamorphic shows before; I shot some second-unit stuff for Fred Elmes and David Lynch on *Wild at Heart,* but the footage never made it into the film. It's a tough frame to work, but it looks beautiful on the screen. My main concern with *Suture* was the lenses, because they're very temperamental and there's a [reduced] depth of field. In a black & white film, when you start losing more and more depth to the lenses, and you're just dealing with tonality, the information can get more and more obscured. Plus, it was the opposite direction that we wanted to go with the film, which was intended to have high depth of field — in black & white, which already means slow emulsions.

"I've seen anamorphic films which were shot wide open, and I just don't think it works very well. This was a very complex, intricately designed film, and anamorphic would have been going against the grain. We have scenes that are intentionally high depth-of-field scenes. During all of the psychoanalytical scenes, I was pushed up as high as I could go, to about 5.6, so I could hold everything in focus."

In pointing out the requirements of his palette, Gardiner notes, "It was fun reading the *American Cinematographer* article on Janusz Kaminski [*AC* Dec. '93], and seeing how slowly he rated his black & white on *Schindler's List,* because I ended up overexposing the same stock — Kodak Double X — by one-and-a-half stops."

Gardiner points out, however, that the two cinematographers confronted entirely different artistic parameters in their work. "I read something interesting in Kaminski's article — that he was trying to lighten the faces with yellow filtration. I had a black actor, of course, so the filtration didn't work there. That approach works in *Schindler's,* because everything is against darker backgrounds — the city is dark, the buildings are dark, the trains are dark, the clothing is dark — and he was going for white faces. Kaminski was able to lighten the faces because they were the lightest things in the whole film. In *Suture,* white is the element of the frame, so grey became something to distance the white from. The faces have to work in grey tones, and they become the thing you judge against. You may take half of that face and lighten it, or use window light to [help separate things]. I think *Suture* has a sense of naturalism at work that's very pretty."

Gardiner did have some worries about the postproduction process, during which the print would be squeezed. "Super 35 is tough in that process," he says. "My fear was that basically, it was another generation blow-up, and we were dealing with black & white besides. The granularity that came out in the print was fine, though; it's just that there aren't a lot of very good lenses and [processing] houses to make the squeezed print; we ended up going to Foto-Kem, and it worked out nicely."

Suture wastes no time grabbing the viewer's attention. In its eye-catching opening sequence, Clay is awakened in the middle of the night by a shotgun-toting assassin. After observing the shadowy intruder's entrance from a second-floor landing, Clay grabs a rifle, makes a catlike dash down a hallway and seeks refuge in a stark white bathroom, where he awaits the final showdown from behind the curtains of a large circular tub. As the assassin enters the room, the deadly tableau is presented in a spectacular overhead shot that exploits the

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full effect of the gleaming tub against Haysbert's dark skin.

"The opening sequence, except for the overhead shot, was edited together from footage that shows up at the film's climax," Gardiner explains. "The shot in which Clay wakes up and moves to the edge of the bed was fairly complex. There are directorial ideas going on there that we have to execute — for example, we're not supposed to recognize the guy at the door. So you take your lighting cues from the script. In that particular sequence, we went beyond our broad concept of white on white and into higher contrast, with broader areas of darkness in the frame or patterns on the wall. Up until that point, I was working across the entire frame, trying to illuminate things and keep a lot of information in the frame. Now, we had a chance to get a little moodier."

One particularly tricky shot during the sequence is intended to disorient the viewer a bit by presenting what appears to be a high-angled shot from Clay's point of view, looking down upon the intruder from the second floor. "Throughout the rest of the film, we'd been going up high and shooting down at things, so we decided to do it again," Gardiner relates. "Clay goes to the bannister to look at the door, and we cut to what seems to be his POV; in reality, we're kind of hovering in the air, and as we turn back from this shot, we see Clay at the railing. We were actually shooting 20 feet in the air from scissor lifts.

"We shot almost entirely at practical locations, such as the big round apartment in this sequence, which was actually a foreclosed bank building," he continues. "The only set built for the film was the bathroom for the tub sequence. Generally, that scene was about getting the whites to glow without destroying the overall image. The high shot wasn't really that difficult. There are certain points where you've just got to let it go, and I knew that Dennis was basically going to be a silhouette against a white tile tub. However, there were some other close shots where I had to go in and light Dennis. There's only one shot where you can see a shadow from the lighting, but it's very brief. You could get rid of that by moving the light, but then it wouldn't be good lighting anymore. On the whole, I tried to keep those shadows out. The thing about lighting is that it's not so much where the lighting comes from, but where it's going after you're done using it — ideally, that's off-frame. You can't just pound lighting into a black actor; it has to be from a direction that will help you — a sidelight or a three-quarter front. And again, it's crucial to know which way the actor is going to look."

Gardiner admits that he had his share of headaches while pulling the film's visual concept together. "The first day we were in that upstairs bedroom set, I had trouble getting a grasp on it — the white curtains, the white bed, and so on. You've got people next to the walls, and 12Ks working on scissor lifts from across the room, and all the while you're trying to avoid multiple shadows and to create a soft light that will blend. The problems I had are right there in the film, but I'm fairly happy with the way it turned out. We also had huge dolly moves from one side of a person to the other, and with Dennis you have to prioritize which end of the shot is the point where you're going to sit longest so you can see his features. If you come around at the beginning of that, 180 degrees, so the light becomes flatter, he's not going to expose. Good direction of light, and avoiding overlighting, are what make the opening sequence work."

Although the cinematographer has generally scoffed at the use of Polaroid tests while filming, he succumbed to the temptation on this project. "Over the years, I'd worked with a number of people who liked to take Polaroids of scenes, and I always reacted by saying, 'What for? What's the point?' But on this film I shot black & white Polaroids to test the effects of certain filters on the day exteriors, and it was wonderful; it showed you right then and there approximately what you'd be getting, although it wasn't going to be exactly the same as the Kodak stock. I used the Polaroids for the first two weeks, but by then I'd caught on." In general, Gardiner only used filtration for his exteriors. While shooting day exteriors, he occasionally used a 23A or 25 to enhance details in the sky and clouds.

Gardiner points out that the picture's art direction was often as important an element, photographically, as the characters. This led to some interesting lighting tactics. During a scene in which a team of white-gowned doctors and nurses attempt to reconstruct Clay's face in a pure white operating room, Gardiner once again found himself using other tonalities to separate the elements in the frame. As the shot begins, the camera is tight on Clay's prone form; it then pulls back and pans left to right to reveal the medical team at work. "I used a light yellow filter, a number 6, to bring out the wall on the left-hand side, but I had to balance things carefully because an X-ray machine is visible on the right side of the room during the pan," he notes. "I used the overhead surgical lights to add accents on the doctors' gowns. This was one of the few films in which you'd actually light a wall; usually you're trying to take light off the walls. I tried to spread a certain ambience and make the walls even, but I didn't want them to be flatly lit to camera."

Gardiner confronted X-rays at several points during shooting, and offers some well-considered advice to fellow cinematographers. "There's one scene where Mel Harris is examining some X-rays, and I was just spot metering to death — ND six on this X-ray, ND nine on that one. Those types of things — X-

rays, lampshades, and light tables — are impossible to judge by eye, because you'll just blow them out and ruin the shot. If you make a mistake, you could end up with grey or washed-out X-rays. That sequence was lit by fluorescents on stands, with a little bit of bounce, and it came out perfectly."

This delicate balancing act also applied to exterior scenes, especially one in which Vincent and Clay chat in an automobile as the Phoenix landscape rolls by outside the car windows. "I wanted the background to be detailed and clearly visible," Gardiner says. "When you're dealing with television, people in a hurry won't concern themselves with the background as long as some of it comes through. But with black & white, I felt I had to hold the background perfectly, and it was very tough to do. We had four HMI pars working on the two guys in the car, because we had to build the interior up. I first came upon this concept while working with Wim Wenders and Robby Müller on *Paris, Texas*. Wim came up with the idea because he was dealing with the broad landscapes of Texas; he didn't want a glowing white window in the background."

To enhance the visuals elsewhere in the film, Gardiner occasionally mixed HMI and tungsten units in the same scene. He explains his strategy thusly: "Basic HMIs contain full wavelength color in them and, therefore, panchromatic film stock is more sensitive to them, especially the blue that's in the light. What it gives you is a little bit more contrast. That's not to say that when you're using tungsten light you're not working the whole contrast range; you just have to be aware of it. I decided to mix because the appearance on the film is different.

"I actually do it in color as well; I use 81EFs and I'll start working blue at the door, and by the time they get to the back room you'll be in tungsten — it's still partially corrected tungsten, because that's where you run into the problem I mentioned. In black & white, though, you don't have the color problems. In the big apartment in *Suture*, for example, we'd have daylight on one side of the room and 5Ks in the upstairs bedroom — pure tungsten. So it's actually mixed across the frame; the blacks on the left side of the frame are different, and the element of the frame that has a lot of daylight in it comes out a little more contrasty than the tungsten area."

The filmmakers used other unusual tactics as well, such as "jumping the line" (using reverse edits) in a scene in which a detective questions a woman who may have witnessed the murder of Vincent and Clay's father. The characters' dialogue begins normally in close-up, then cuts jarringly to a deep-focus shot that takes in the entire length of the room they occupy. "That scene was inspired by Kurosawa's cross-cuts in *High and Low*," Gardiner explains. "We could have shot the scene at a normal second position after the cut, with the two characters against the wall. But the unusual cut adds a three-dimensional feel. Our decision on *Suture* was dictated by the shape of the room. We went against what screen direction called for to preserve the composition of the frame. We've already presented enough information about the room so that the viewer won't get confused, and the cut adds a disturbing element."

This willingness to take chances paid off at Sundance, where Gardiner found himself marching to the podium to accept the cinematography prize. Recalling the experience, he says, "I was thrilled that the film was at the festival, but I had no expectations. I was blown away to win, no question about it. When they say your name, it's an unbelievable feeling. But all I actually heard was my first name, because our whole group just started yelling."

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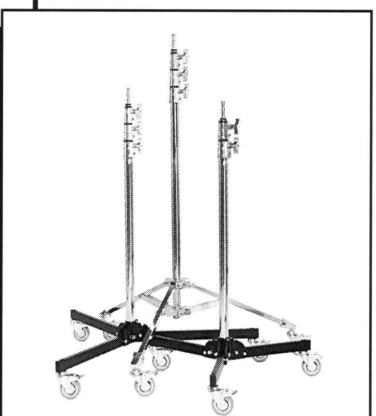

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It Could Happen to You — If You're Lucky

Cinematographer Caleb Deschanel, ASC, helps director Andrew Bergman realize comic fantasy about Manhattan cop who splits lottery winnings with waitress.

by Brooke Comer

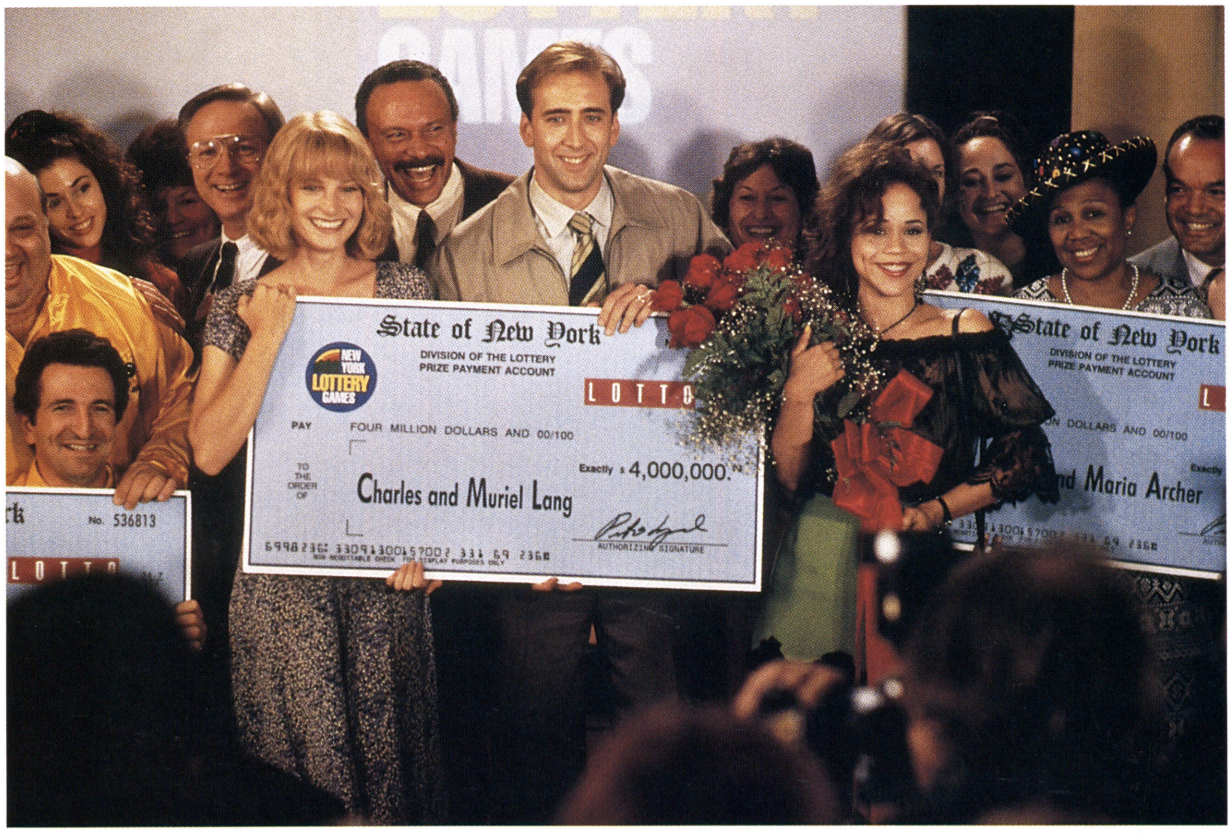
It's not easy to fool a New Yorker, but the production team on *It Could Happen to You* managed to pull it off with panache.

The new coffee shop in downtown TriBeCa, with its cozy, offbeat ambience of thrift-store kitsch, certainly *looked* real enough. Soon after the hip hang-out appeared, curious natives, always on the prowl for lunch-time haunts, began flocking to its doors. It was left to production assistants on the set of Andrew Bergman's *It Could Happen to You* to explain that the diner was actually a finely detailed set. But the hard truth didn't make it much easier to shoo the "customers" away. "We often found ourselves with more extras than we needed," observes cinematographer Caleb Deschanel, ASC. "They just didn't want to leave."

The surplus of spectators was just about the only problem the cinematographer faced on the shoot. "New York can be a tough town to work in, but Andy has a great sense of humor and he kept a nice, easy atmosphere going," says Deschanel.

The film tells the tale of a New York cop (Nicolas Cage) who fulfills his promise to split his lottery winnings with a waitress (Bridget Fonda), much to the chagrin of his wife (Rosie Perez). In addition to at least eight days in the diner set, the crew shot at well over 100 other New York locations.

Deschanel has shot all around the world, but *It Could Happen to You* was his first New York movie. "I'd always wanted to work in Manhattan," he admits, "even though it's a difficult city to shoot in. Just getting around town is a challenge." But his crew was well equipped with



The cop (Nicolas Cage) and the waitress (Bridget Fonda) display their newfound wealth, while the officer's wife (Rosie Perez) cradles a bouquet of roses.

Photos by Myles Aronowitz

pros like gaffer Dick Quinlin, "who's really dedicated and has lots of great ideas," and familiar faces like grip Mike Miller, who'd worked with Deschanel many times before, and Scott Ratner, the second assistant from *The Natural*.

Deschanel credits Bergman's native sense of New York realism for the decision to build the diner set instead of shooting on a stage. "There's a very strong sense of neighborhood in the movie. By using a diner in a real location, we were able to bring a reality to the movie that wouldn't otherwise exist. Andy comes from New York: he knows that world. It was also important for him to have a sense of life outside the diner, of that world going by. In many ways, the coffee shop was a character in the film and the focus of a lot of drama."

Production designer Bill Groom added to the illusion by decorating the diner's interior with faded posters and other props to lure the actors into the fantasy. "To some extent those things have an emotional effect on the actors, if nothing else," says Deschanel. "Bill created a world they could believe in, which could help develop the characters they played in the film."

The construction of the set did present some logistical difficulties. The empty parking lot where production designer Bill Groom and his team chose to build the diner was a block away from a major thoroughfare. "We had to make sure sound wasn't a problem," says Deschanel. "We couldn't totally soundproof, but we made some attempts."

As he has on most of his films, Deschanel chose to shoot with Panavision equipment, this time a Panaflex Platinum. He calls the Panaflex "the most complete package around." When he needed a fast lens for a scenic sequence that looks out at Manhattan from the Queens side of the East River, Deschanel tested many kinds of lenses, but eventually chose an Ultraspeed T-1. "We did light tests on the buildings, and when I shot it at 1.9 or 2.0, even with the highest speed 96 film, we couldn't get the iridescent quality that we wanted." He used the fast T-1 lens, and "drove my assistant crazy because the depth of field was one millimeter." But he found the magical beauty he was looking for in the city skyline in the background. "It had a carnival feeling to it, because of the intensity of the lights being exposed at that level."

Deschanel likes to get his inspiration from reality, from still photographs and from paintings. "I try not to get inspired from old movies, but I find that I do," he admits. To help foster those inspirations from the real world, he'll keep a notebook or tape recorder handy and "try to make myself aware of my surroundings, and make note of various lighting situations. Then I'll call on that and duplicate it in a film." Lighting, he believes, should amplify emotions that a character is going through in a given scene. "You can play against it, or play with it. Those are the kinds of things that separate someone who does good work from someone who does mediocre work."

It Could Happen to You is a blue-collar Cinderella story, and Deschanel wanted it to have

Above: ***Perez and Cage practice their moves for an upcoming scene, under the watchful eye of Deschanel (center, holding coffee cup).***
Left: ***Before fiscal destiny binds them together, the film's central duo meet up in the all-too-realistic interior of the diner set, which lured in scores of passing New Yorkers.***

Directed by Andrew Bergman
Produced by Mike Lobell
Director of photography,
Caleb Deschanel, ASC

a certain grittiness. "In many ways, the story played against the idea of how love triumphs over a material world," he says. "It shows a contrast between what people think they need and what they really need." The New York air itself provided some of the gritty quality Deschanel sought. For the picture's few exteriors, he used filters to soften the light. "It wasn't a big action movie," he explains. The shoot did include some handheld sequences and Steadicam work, but most of the scenes were interiors involving dolly shots.

Film stocks varied between 5248, 5293 and 5296 depending on the situation. Deschanel used them "more or less interchangeably." At first, he was reluctant to use older versions of the 96. "I tested the new incarnations along the way, and the ones we ended up with were fine." He talked stocks with old friend Stephen Burum, ASC, who'd recently shot *Carlito's Way* in New York, and in the end, Deschanel was very pleased with the 96.

Deschanel started his career making documentary films, and pursued cinematography after film school mainly "because I knew how to use a light meter." The Philadelphia native had originally been seduced from his family's traditional medical studies path by a love for photography, which turned serious during his junior year of college at Johns Hopkins, where he was shooting stills as part of his duties editing the school newspaper. Through friendships with classmates like Matthew Robbins and Walter Murch, who were a year ahead of him, he discovered that behind the hobby lurked a potential career. His new heroes were the masters of the French New Wave, Truffaut and Godard, as well as Howard Hawkes, David Lean, Stanley Kubrick, John Ford, and Alfred Hitchcock. "Suddenly, the combination of all the movies I was seeing at the time, plus the shooting I was doing as editor of the school paper, ignited into a career interest."

Photography represented a profession for the aspiring cameraman, but it took some time before his family took his work seriously. Not until Deschanel made *The Black Stallion* did his mother acknowledge that he was working in a professional realm. "She could never understand how sitting in an edit room looking at pictures and deciding where to cut was something people got paid to do. Or that getting up at dawn to watch sunrises could have anything to do with making a living."

At USC's graduate film school, he explored the full spectrum of filmmaking, and learned to regard the filmmaking process as an integrated whole. "I don't compartmentalize the various aspects of filmmaking in my mind. Anyone who works on a film is part of making that film happen, whether they're the director or the costume designer. You're all making a contribution in a different area toward the same end, to telling the same story."

Elaborating on his point, Deschanel recalls serving on the Academy's make-up committee when *Mrs. Doubtfire* was nominated. Deschanel heard make-up artist and nominee Greg Ganon talking about how the script had evolved and changed through a series of makeup tests. "Robin Williams' character goes through a transformation aided by makeup that is essential to the film, just as editing or music is. When a certain feeling isn't there, you can change the pacing or the music, and suddenly the desired emotion will come charging forward. Each element of moviemaking serves to drive the story."

Deschanel got his first break at the American Film Institute. With funds from the Sons of the Revolution, he was able to shoot a film about Valley Forge. He also got a grant from the Corporation of Public Broadcasting to make a black & white film about one of his passions — trains. Deschanel had always been entranced by the scene in *East of Eden* in which James Dean travels from Monterey to Salinas by rail. "He gets off the train in the sun and a cloud goes by," the filmmaker relates. "You think it's steam from the train. Then he walks into a field and the cloud rolls off into the distance. It's amazing."

Deschanel had also wanted to make a film in black & white. "My mentors, Gordon Willis, Haskell Wexler, and Conrad Hall, all told me that the young guys today don't know how to shoot black & white, because we all came up shooting color. They think that black & white is becoming a lost art, a whole different medium that no one knows anymore." Deschanel obviously got the hang of it; his black & white short, *Trains*, won a Silver Bear at the Berlin Film Festival.

Trains and the *Valley Forge* film, both of which Deschanel shot and directed, positioned the young filmmaker as a promising cameraman in the industry. Right out of USC, he began getting jobs on educational films and documentaries, from companies like Churchill and Dimension Films. After teaming up with Venice Beach neighbor and fellow educational-film director Carroll Ballard on the documentary *Rodeo*, Deschanel went on to his first job as a feature director of photography on *The Black Stallion*, which was Ballard's first job as a feature director. Executive produced by Francis Ford Coppola, *Black Stallion* established Ballard and Deschanel as bankable filmmakers, and revealed a production value onscreen that far exceeded the actual budget. "We had a long shooting schedule, and the film required a certain magic that you can't force in a short period of time. But because we weren't dealing with big stars or big crews, we could do it. And

the last thing i want to do inside the 15th precinct is blow out the windows.

Brian J. Reynolds | Director of Photography

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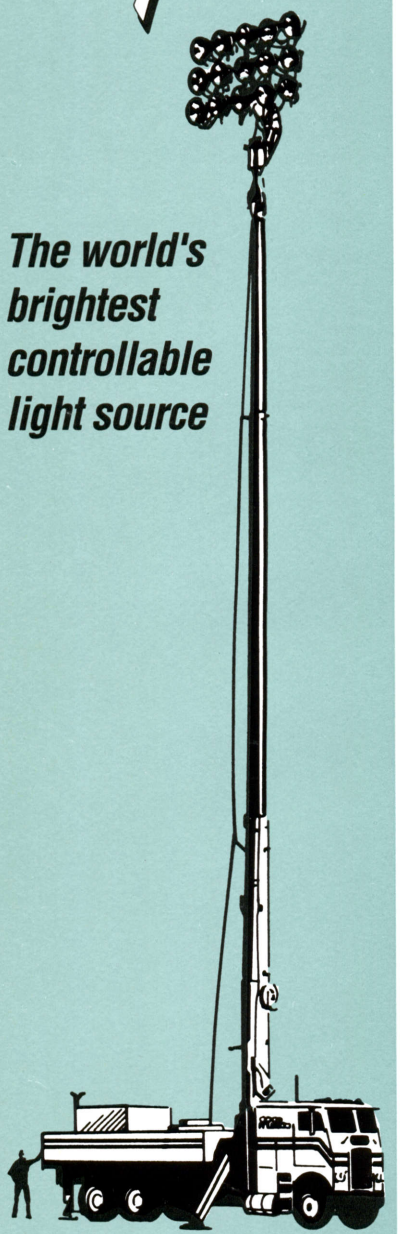
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looking back, it was a wonderful experience." With typical modesty, Deschanel credits the success of the film to Carroll Ballard, the actors, and the horse trainer, Corky Randall, whose father, Glenn Randall, trained the horses in *Ben Hur*.

The film, shot in Sardinia, Rome and Canada, also taught Deschanel the importance of a good projection system. While screening dailies in a tiny village theatre in Sardinia, Deschanel and Ballard noticed a problem with the colors. "We panicked, jumped on a plane to Rome, and viewed the dailies again at the Technicolor lab there. They looked completely different; they were fine. But it made me realize the extent to which projection can affect a film. If it's badly projected, everyone looks foolish. A lot of people don't realize this. If I see a film in a venue where I feel the projection isn't up to standard, I'll watch it at the Academy, where the projection system is excellent. Sometimes it's like watching another movie."

Deschanel followed *Black Stallion* with *More American Graffiti* and *Being There*. The latter, directed by Hal Ashby, was his first Hollywood movie. Deschanel would work with Ashby again on a Rolling Stones documentary and the Neil Simon film *The Slugger's Wife*. He also shot, among others, *The Right Stuff* and *The Natural*, in between which he directed *The Escape Artist*, with Stephen Burum, ASC taking over as director of photography.

Deschanel still practices his directing skills regularly in the commercials produced through his company Dark Light (he also helmed several episodes of his friend David Lynch's acclaimed series, *Twin Peaks*). Commercial work also gives Deschanel plenty of opportunities to test stocks, lenses and equipment in shorter-format work. Since *It Could Happen to You* wrapped, he's also been busy writing a script that he'd like to direct. "When I went to work on *It Could Happen to You*, I was anxious to try my hand at a romantic comedy, but I think serious films are more my forte," he notes. He also likes the challenge of period films. "It's not easy to evoke a sense of period in a film, and it's interesting to watch those films and see which ones fail and which ones succeed."

Regardless of what his next project will entail, Deschanel will continue his interdisciplinary tradition, shooting and directing films, TV shows and commercials. "I find that [the variety] revitalizes me. It opens my eyes to new possibilities. Directing *Twin Peaks* taught me that I could get through eight pages a day. That doesn't seem like enough time, but you discover that the quality of your work doesn't suffer that much if the actors are good. They can save you from the fact that you don't have time to do anything." The diversity of his work and skills has made Deschanel a comfortable player in any environment.

When he started out in educational films, Deschanel couldn't afford to go out and buy fancy diffusion materials for $50 a roll. Instead, he'd go to the supermarket, buy wax paper and tape it together. The same kind of creative resourcefulness comes into play in his attempts to shoot a diverse range of projects. "It's all about problem-solving," he says. "Each job presents different problems that you have to solve, for lack of time, money, or whatever, but hopefully not for lack of imagination."

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ILM Meets *The Flintstones*

Effects house uses computer technology to enhance cave dwellers' world.

by Ron Magid

In the post-*Jurassic Park* era, it's hard to imagine a film depending solely on animatronic technology to recreate dinosaurs, but *The Flintstones* began shooting during that brief twilight zone prior to the release of the Spielberg dino-epic, when computer graphics (CG) dinosaurs were an unknown commodity, not the perceived reason for the box-office success of all time. Still learning of the impending CG revolution and wary of complex visual effects, *The Flintstones'* director, Brian Levant, decided to use full-sized animatronic puppets and men-in-suits on-set — and therein hangs a tale.

When *The Flintstones* began production, Dino the dinosaur, Kitty the sabertooth tiger and all the other critters familiar to fans of the original animated TV series had been designed and built by Jim Henson's Creature Shop. Industrial Light & Magic had been brought in to handle the visual effects on *The Flintstones*, all nine shots, including some other dino creatures but largely consisting of sophisticated puppeteer- and wire-removal work and a lengthy effects sequence that introduces viewers to the town of Bedrock and the world of the modern Stone Age family.

ILM assigned Mark A. Z. Dippé, fresh from his post as visual effects co-supervisor on *Jurassic Park*, to head up *The Flintstones*. ILM also wanted to give Judith Weaver, *Jurassic Park*'s visual effects coordinator, a gentle boost up to effects producer. Both she and Dippé expected *The Flintstones* to be a relative breeze after the breakneck pace of *Jurassic Park*. "This show was perfect for us," Weaver laughs. "It was a nine-shot show with a client Mark and I had both worked with."

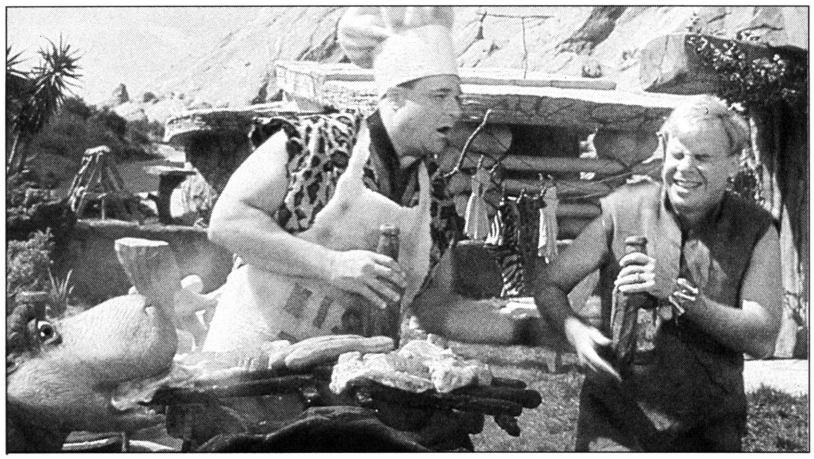
Weaver's "light" introduction to feature film effects producing was soon to undergo a Jurassic weight increase, however. Once Levant began working with the man-in-a-suit Dino on-set, the director didn't need a cave painting to see that the Flintstone's rambunctious purple mascot couldn't compete with his cartoon counterpart using animatronics. Suddenly, Levant wanted to know whether ILM was ready to tackle Dino, among other things, and Weaver was facing a visual effects producer's Waterloo. "Brian realized that the Dino suit's limitations wouldn't allow him to do what he wanted with Dino, and he asked us to help," she recalls. "So there we were on the set at midnight, having to decide whether we could do the shots or not on the spur of the moment."

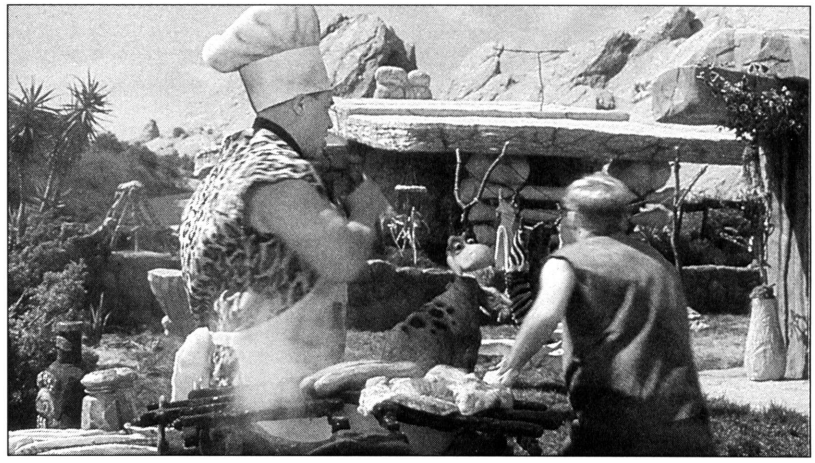
Ironically, at their first meeting, Dippé had asked Levant if *The Flintstones* might be better served by the powerful mix of close-up animatronics and full-scale CG creatures which *Jurassic Park* was on the verge of proving classic. Now Dippé's words came back to haunt him as Levant asked if he could indeed make Dino and Kitty using CG. Dippé's mind was reeling: Dino would be a great CG character — he was a comedic version of a *Jurassic Park* dinosaur. But the sabertooth tiger scared him. Though he'd licked virtually every foreseeable CG problem on *Jurassic Park*, fur was the one thing that had continually eluded him. Did he dare agree to tackle Kitty? "It was kind of like 'put up or shut up,'" Dippé laughs. "It was really scary. I literally had ten minutes to decide."

Suddenly, the project

Opposite: *Fred (John Goodman) howls out his wife's name in a faithful re-creation of the cartoon's title sequence.* **This page, top and bottom: *As Fred bellows, Kitty, the CG sabertooth tiger created by ILM, gets comfortable on the stone-age doorstep.***

Photos by Ron Batzdorff





This page, top and bottom: *As Fred and best-pal Barney Rubble (Rick Moranis) banter by the barbecue, the Flintstones' digital housepet, Dino, makes a sly move.*

had changed radically. What Dippé and Weaver had envisioned as a small show was about to assume virtually the same magnitude as *Jurassic Park,* with one crucial difference — fur. At the last minute, *The Flintstones'* producers handed ILM what amounted to a master's thesis in computer animation. For Dippé, the struggle began that fateful night on the set: "I shot two versions of the Kitty plates: the shot we used, which was the original angle, and one a little wider to be safe, because at first I felt we could only do Kitty if we didn't get too close. Fortunately, we only had a few cuts to do, and they basically mimicked those classic Fred-throwing-Kitty-out-the-door shots from the TV show's opening and closing credits, so I started feeling queasily secure about it!"

Now that he'd said he could do fur, it was up to Dippé and his ILM team to figure out how. Dippé asked his computer graphics supervisor, Alex Seiden, to organize brainstorming sessions back at ILM. Soon Seiden was heading the hairy R&D effort, reading up on previous attempts to create CG fur, and funneling suggestions from others at ILM to computer programmer Dan Goldman. "My role was to stir the creative juices, get people to throw out wild ideas, then quickly focus in on a technique we could pursue," Seiden says. "It was a creative group endeavor."

ILM is remaining understandably mum on the exact approach that brought Kitty to vivid CG life for *The Flintstones.* Eric Enderton, who wrote the fur program along with Joe Letteri and Goldman, would say only this about their work: "Though we didn't use the same program for the *Jurassic Park* dinos to create hair, we built on that framework, so it was more like adding an extra module to the existing program. Fur and hair, like fire and water, are natural phemonena where the visual effect is the collection of a zillion tiny particles of information in nature. Modeling every hair independently in the computer would be computationally prohibitive. Eventually, we found a suitable approximation, something which gave us the overall look, but didn't require the expense of modelling every hair."

"Kitty was not a sure thing," CG artist Carolyn Rendu states emphatically. "The obstacles were unbelievable. Hair is one of those things that behaves in a very complicated way that we recognize instantly, so we know immediately if it's fake."

Rendu became involved early on in the development of the hair program, working with "shader" writer Letteri, who had created the CG rain program for *Jurassic Park.* "I'm an artist, so I came on to help Joe, who's one of the top technical people for writing shaders, which are descriptions that enable computers to make the surfaces of CG objects behave in certain ways. In this case, the computer didn't even know what a hair was, among other things, so how could we tell it which direction the hair points in, or what angle the hair grows out from the skin at?"

Animating Kitty was essentially the same as animating Dino, but once the process was completed, the feline took some hair-raising turns all her own. As Rendu struggled to add hair to Kitty, she fed innumerable parameters — such as hair direction and length — into the computer. The length of the rendering time became increasingly frustrating as Rendu worked on one of the toughest shots of her career: that famous moment from *The Flintstones'* opening credits when Fred throws Kitty out the door, only to have Kitty jump back in through the window. "In that shot, you see Kitty from all sides, so she had to look good from every angle!" Rendu exclaims. "We couldn't cheat it. Because the ren-

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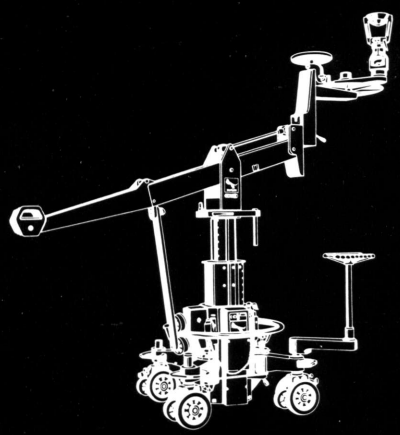

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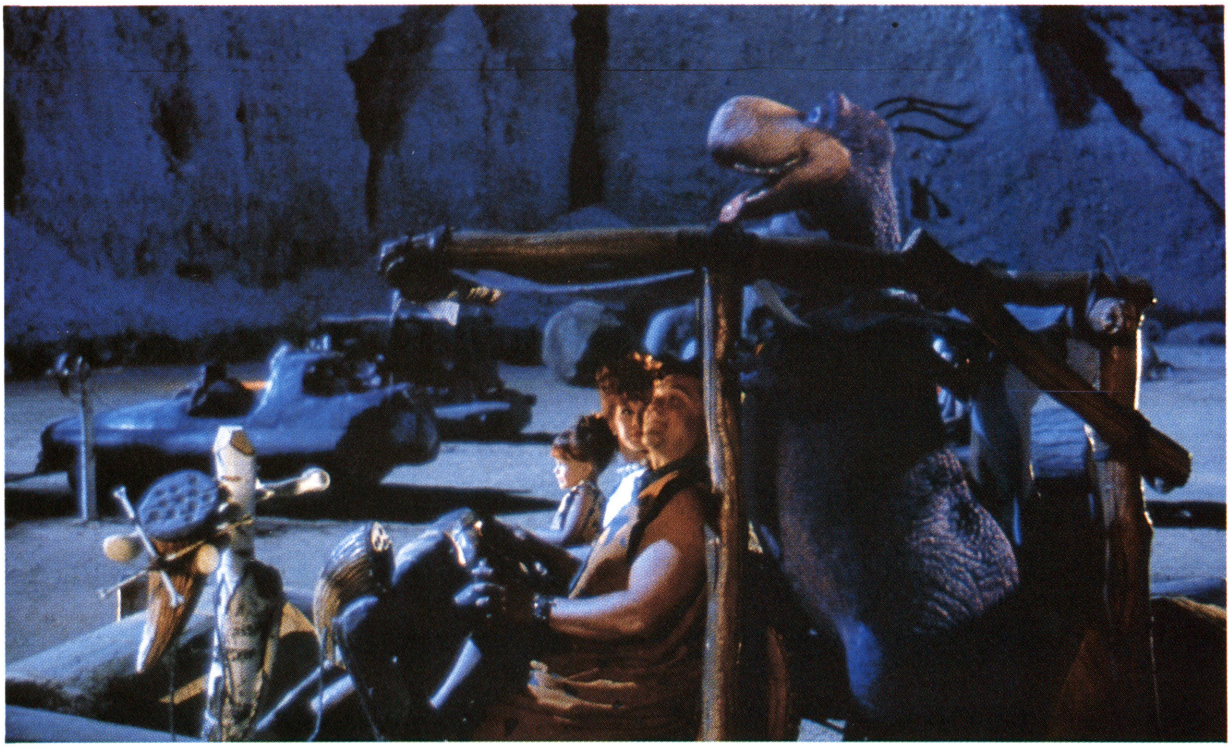

At the Bedrock drive-in, Dino improves his sightline.

der was so long, I had to wait to the next day to see if what I was doing was working."

While Kitty's fur problem was being licked, another group was attempting to breathe life into the world's most famous dino-dog. Granted, it was easier to make Dino in the wake of *Jurassic Park*, but not as easy as one might think. "In *Jurassic Park*, we made dinosaurs come to life, but they were naturalistic animals," Dippé explains. "Dino is a caricature. He looks photorealistic, and he appears to really be in a scene, but he is a purple dinosaur dog who behaves in an exaggerated manner. We studied a lot of dog reference for Dino. Brian Levant shot video of his neighbor's poodle, because he loved the way it behaved, and that's what we used for Dino's character and style. It was critical to get the right feeling for Dino, that silly friendly dog who just loves his master too much, into the film, because Dino is a character everyone knows. It was all about that comedic performance."

Bringing Dino out of the stylized cartoon realm and into the reality of Levant's film required some redesigning of *The Flintstones'* mascot. The Henson Creature Shop's project leader, Jamie Courtier, had reconceived Dino as a man in a suit; after the decision was made to do Dino in the computer, he supervised the sculpting of a new maquette which was shipped to ILM, where Ty Ellingson, who was effects art director on *Jurassic Park* and now *The Flintstones*, finessed the design. "We knew everybody wanted to see Dino in the real world, but they wanted it to be the Dino from the cartoon," Ellingson says. "I used a portrait of Dino from the TV show as our hero pose, but we still had to make that transition from the cartoon to the real world. That's where the real finessing and designing came in. In the cartoon, Dino's skin was smooth and a homogeneous purple color with black spots on his back, and his feet were very stylized little black things. For the film, our Dino's skin needed a certain amount of realistic variation in color and wrinkles, he had to have functioning toes because he had to do certain tasks, and he had to have scale and dimension. The director felt his neck was too long, so I made it shorter; he was also concerned that the hands I'd originally designed were a bit too clawlike and scary, so I softened them and made them more like toes. All told, I did 15 versions of Dino."

The task of translating the 2-D Dino design into the 3-D world of computer graphics fell to animation supervisor Eric Armstrong, who oversaw the first half of the effects process before ILM transferred him to the upcoming *Casper the Friendly Ghost*. Armstrong opted to build Dino entirely within the computer realm, using the technique he employed to create *Jurassic Park*'s memorable galimimus herd: "I took a lot of primitive shapes and intersected them, like adding putty onto a wire sculpting armature. I just kept building it up until it looked, roughly, like Dino. At that point, I had a homemade version of what I'd get if I scanned a maquette of Dino into the computer. After I built him, we did tests to find the best approach to animate him; someone had to model him, another person had to paint him and others were handling all the other steps to sew him all up and make his skin wrinkle. All of that work

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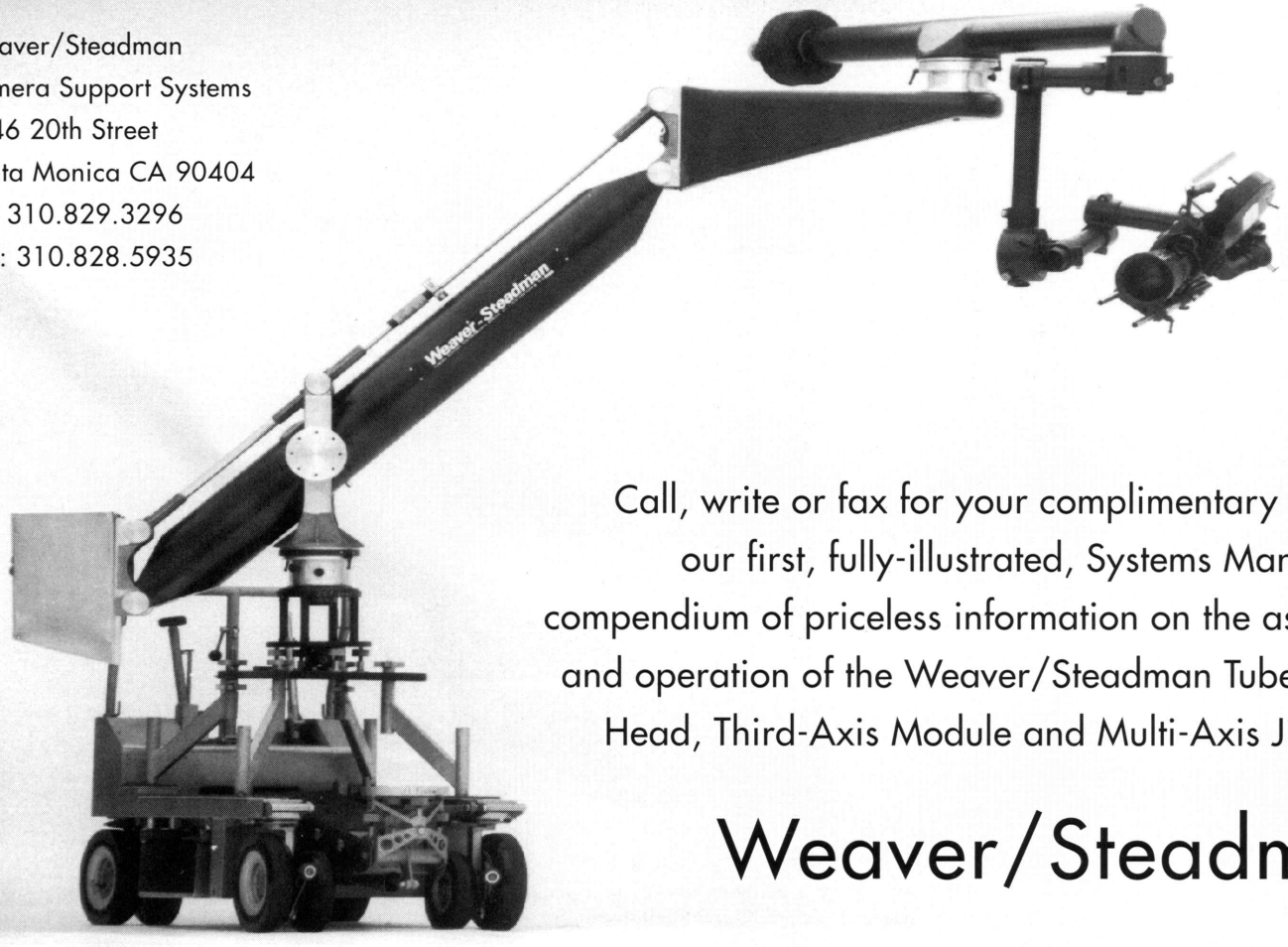

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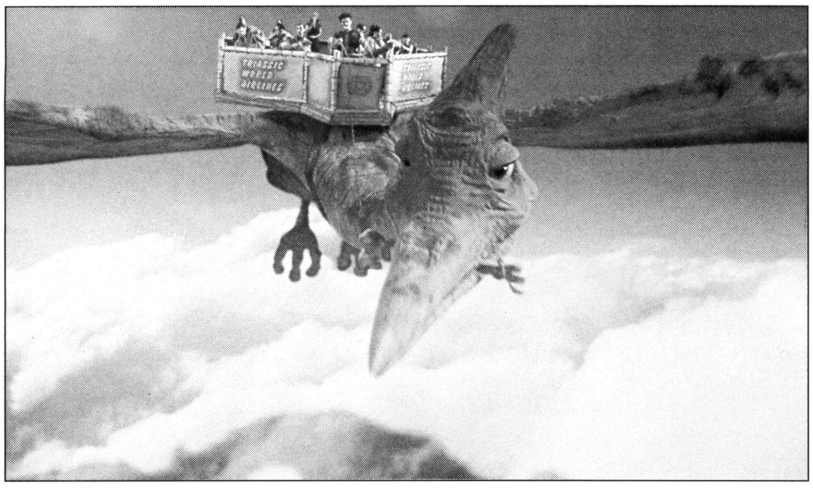

A Pterodactyl "airliner" is part of the film's ambitious opening sequence, which combines live action, CG and miniatures.

takes a certain amount of time to get right. Usually we have several months up front to get that all figured out; in this case, someone suddenly said, 'Oh, by the way, now you have to do one of the stars of the film!'"

Animating Dino, after watching a number of *The Flintstones* cartoons, would appear to be a straightforward task. It was not. "In some ways, Dino was harder than the dinos in *Jurassic Park*!" Armstrong insists. "It's one thing to animate a dinosaur when you've never seen a real one; it's another thing to animate a creature that half the world loves and has seen forever and ever. We decided that the TV Dino was a cartoon of the 'real thing,' which meant that we had to come up with the real thing! Suddenly, we were forcing 3-D rules on a 2-D creature, and we started walking this fine line of 'How real is too real?' and 'What's not real enough?' We wanted to push Dino and make him cartoony, but if we went too far, suddenly he wouldn't be real anymore."

In the cartoon, Dino could change shape and size practically at will: he could hide under a table or push his head through the roof of Fred's car. But ILM feared that if they tried that in the film, the audience would think Dino was literally changing size. Eventually, they worked out a system whereby the family dinosaur's dimensions were adjustable from shot to shot. *The Flintstones'* second animation supervisor, James Strauss, who finished the film after Armstrong left, faced a similar dilemma. "Our original Dino model was cute and chubby with little short legs," Strauss relates, "but when I came on about halfway through the show, I felt that his running shots weren't showing him off to his best advantage. We decided to fix the model, so we ended up with two Dinos — a skinny Dino with slightly longer legs for the running shots, and a chubby one for the others. We used whichever one looked best in the scene."

All of *The Flintstones'* CG shots were created by two-person teams consisting of a CG animator and a technical director. While each scene was being animated, the TD simultaneously handled the rendering, compositing and all related technical issues, which enabled effects supervisor Dippé and CG supervisor Seiden to see crude renderings of each shot at the end of the day. Of course, it was only after several days' or weeks' work that the lighting and secondary animation reached the expected level of quality.

James Strauss animated one of the more exciting Dino shots, the famous "Wilma, I'm home!" scene in which Dino barrels toward Fred at ballistic velocity, tearing through the living room and plowing right into his master. The live-action plate contained only the full house set and John Goodman as Fred, who mimed Dino's loving assault by falling onto his back on cue. "The first thing I did was match the movement of my computer's virtual camera to that of the real on-set camera," Strauss says, "so whatever the real camera was doing, my camera was doing. Then I started building whatever objects I thought were important for casting shadows and stuff — chairs, sections of wall — into the computer. I also added reference objects on the floor to tell me where Dino was as I animated. Next, I stuck my CG Dino model in the virtual set and roughly blocked-in the animation, like a Disney animator would, keeping it alive and then zeroing in on what I wanted, using our SoftImage program. I got Dino moving through the scene at a good pace, got him in sync so he'd hit Fred at the right moment, and then I worked on his legs and how he was running and the way his body was moving. Meanwhile, I looked at Dino from the top and all sides to make sure none of my geometry was intersecting. Once he was working from every angle, I added secondary animation to his body, but his movements were so fast he didn't need much. The final detail was added by my TD, Tom Hutchinson, who extracted one of the rugs from the plate and animated it to give a touch of movement when Dino pounced on Fred."

In one of Dino's most memorable moments, he joins an impromptu conga line sandwiched between Jean vander Pyl, who created the TV Wilma's voice, and Elizabeth Taylor. But even this throwaway gag became an exercise in stress management. Because of various limitations, effects supervisor Dippé was told he could only shoot one take with the screen legend! "That being the case," Dippé says, "and the fact that the shot had been proposed literally moments before, made things a little complicated. I had to decide if I wanted to rig a human being as Dino to keep

the space between Jean and Liz constant, then digitally remove the rig back at ILM, or just do the shot freehand. Ultimately, we just winged it. I wanted everyone to be wild and free, so I had a human Dino stand-in go through the number a few times without Liz. Once everyone was comfortable with it, we had Liz come in, took Dino's stand-in out, and went for it with an empty space in the conga line. We had some latitude if Liz and Jean got too close because Dino could always move sideways or shake his butt. It was a fun shot because we had to make Dino dance with humans and still keep him in character."

Almost as anticipated as Dino is the sight of Fred Flinstone operating his famous Bronto-crane from his little bamboo cockpit atop the creature's massive back. Most of those shots were done using a full-scale rig constructed by Henson's Creature Shop. The rig measured 65 feet from tip to tail but could be used only for head, tail and cabin shots. It didn't include the dinosaur's torso or his legs, however, so any long shots showing the full creature picking rocks up with its mouth were handled by ILM using CG. "We put a great deal of effort into figuring out how the Bronto-crane would grab rocks out of the gravel pit," animation supervisor Armstrong recalls. "In the cartoon, they cheated it however they wanted as long as it looked right! We decided that the Bronto-crane's mouth was just wide enough to get its teeth around a good-sized rock; then [the creature] went through a whole lot of effort to pick the rock up."

The Flintstones' second animation supervisor, James Strauss, recalls doing one of the Bronto-crane shots: "The original plate was shot in a quarry, and John Goodman sat in the cab on a mockup of the dinosaur's middle. We had to extract Goodman and the cab, digitally remove the dino-mockup and replace it with our CG Bronto-crane. The full-scale

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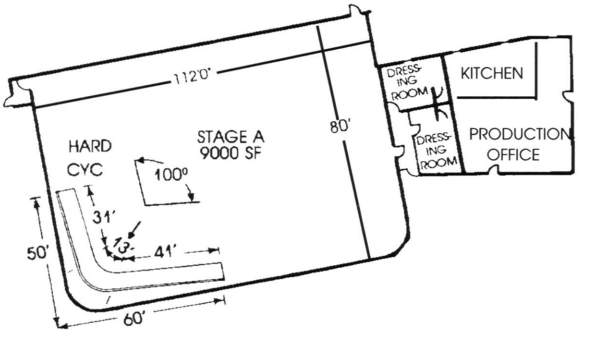

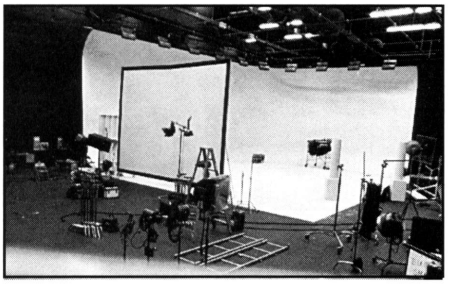

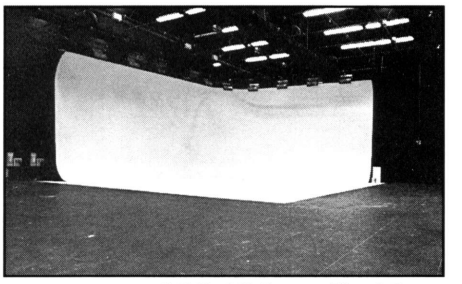

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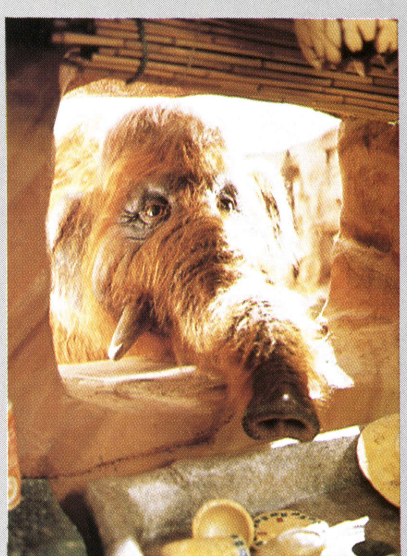
The Flintstones Call on Jim Henson's Creature Shop

When director Brian Levant was first planning the *Flintstones* movie, he was fearful of using any computer graphics effects. He chose Jim Henson's Creature Shop to create an entire prehistoric bestiary for his film, and ILM was supposed to help with wire- and puppeteer-removal and a few choice effects shots. Two weeks into production with Henson's man-in-a-suit Dino and Kitty, Levant realized that there were performance limitations. Ironically, the Creature Shop's worldwide creative supervisor, John Stephenson, had come to that conclusion sometime before: "I was skeptical about using men in suits for the entire Dino and Kitty character performances, as there is a considerable amount of fast action required in *The Flintstones* which presents certain physical restrictions on using suits. The Shop's collaboration with ILM enabled us to successfully bring the original whimsical Flintstones cartoon characters to life to interact with their human co-stars in the film."

The Dino suit was designed by Henson's Creature Shop project leader Jamie Courtier, who worked with Levant at Amblin for several weeks. Once it was decided to do Dino using CG, the restrictions of suit technology were lifted and Courtier was free to redesign Dino more along the lines of the cartoon. A three-dimensional maquette was sculpted and sent to ILM, and the maquette became the basis for the CG shots after ILM's art director, Ty Ellingson, made some minor changes to the design.

A new animatronic Dino head was constructed over four weeks to match the CG Dino. The head was full of radio-controlled servo motors which facilitated the eye, mouth and facial movements; there was even a panting mechanism and mechanical tongue. Though the complex Dino head fit over the end of a person's arm, it was only a hand puppet in the sense that its broad neck movements followed those of the arm within. Otherwise, Dino's expressions were puppeteered using the Academy Award-winning Henson Performance Control System, which made it possible to individually program every single expression the character was likely to make. Another puppeteer could then call up any of those pre-programmed expressions using a Waldo in one hand, while his other hand wore a mechanical glove which operated the mouth shape and various other parts of the head and neck. "By using these techniques coupled with our Henson Performance Control System," Stephenson observes, "we tend to eliminate the problems traditionally associated with using animatronics."



Creature Shop creations for the film include (clockwise from top): a live-in "garbage disposal," a "dishwasher" and the ever-popular Bronto-Crane.

Including Dino and Kitty, Stephenson estimates that his crew built some 20 full-sized animatronic creatures for *The Flintstones*. The most elaborate of these was the Bronto-crane, a 65-foot, 6,000-pound mechanical rig which filled the entire Creature Shop sculpting room. As designed by Jamie Courtier, it consisted of head, back and tail sections. The face was radio-controlled, and the neck mechanics were designed by Henson's Verner Gresty, who used an ingenious mixture of hydraulics and free weights. "It gave us a fast-moving, fluid, snakey neck for the Bronto," Stephenson boasts. "Behind that there was just a hump, upon which John Goodman (Fred

Continued on page 68

mockup only moved right and left, so once it was gone, it took everything I had to create a sense that the cab was actually atop a real brontosaurus instead of just rocking on a hinge. I added subtle motions to the CG bronto to sell that and, at the same time, I animated the broad action of the crane picking a rock up. I also animated the rocks and pebbles falling out of its mouth, and we added filmed dust elements."

ILM's most impressive effect is the one they call "the powers-of-ten shot," a roller-coaster ride of a sequence which begins the film. You may recall the TV show's opening credits, where the entire Flintstone clan and Dino end up at a drive-in. ILM used that drive-in screen as the frame for a movie within a movie: the bony "Univer-shell" logo (the Stone Age's Universal) appears over a pre-continental-drift Earth, then the camera descends through the clouds, past a Pterodactyl carrying passengers, and into the world of *The Flintstones;* the camera nearly crashes into a lake, straightens out, flies low over the heads of a couple of sea monsters, then barely clears a wall of rock to reveal Bedrock spread out below as the Ptero-plane lands in the distance.

The powers-of-ten shot utilized virtually every effects technique, combining live action, CG and miniatures into a single shot. "It was also the biggest shot I've ever done and I think it's fair to say it was one of the biggest shots ever done at ILM," visual effects supervisor Dippé beams. "It was huge. We broke it down into several pieces, but in the film, it's one continuous shot."

Dippé's very first shot for *The Flintstones* was a blue-screen element of passengers in the Ptero-plane's cab. "That was a hard shot because we wanted to create a feeling of size and speed for the Ptero-plane, which was supposed to be 125 feet across and as fast as an airplane," he says. "It was a really demanding, almost dangerous shot. We

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Continued from page 66

Flintstone) sat so we could have instant contact with the actor. We also built two different tails: one that Goodman could slide down, and another that was very articulated and could whip around. Then ILM filled in the rest: the legs, the underbelly and the joins between those sections. The effect works very well."

One of the remarkable aspects of The Creature Shop's work on *The Flintstones* is not only the incredible number of throwaway gags, but their scale and detail. Some of them were quite large, such as the Mastodon that sticks its trunk through the bathroom window to provide water for the sink or the bath. Its massive mechanical head was covered with hand-punched hair, its eyes blinked, and its cable-articulated trunk was equipped with a hose that enabled it to spray water. Then there was the lobster lawnmower, motorized to snap its claws at the grass and throw the cuttings over its back. And of course there was the Stegosaurus time clock (which punches Fred's timecard at the end of the workday), whose fully mechanized head and neck stuck out of a hole in the wall.

There were a number of medium-sized animatronics, largely of the feathered variety. The first one we get a look at is the Alarm Bird, whose tail Fred pulls before getting off work. The bird boasted a number of radio-controlled facial expressions; his eyes opened wide and he had some brow movement. Then there was the Dictabird, which Stephenson calls "an extremely moth-eaten, beaten-up parrot," for which the Creature Shop made some five different versions, including running, sitting and standing models, most of which were suspended from a wire rig and operated via a combination of cable- and servo-control.

Others items in *The Flintstones'* menagerie were quite small, such as Fred's rodent razor, which had motorized guillotine teeth that would chomp up and down. Another handy household item, the Flintstones' back-scrubber, is actually a hedgehog gripping onto a pole. This little creature had a fair amount of cable-controlled facial movement and even squirted water out of its mouth! "I'm a big fan of using cables where I can," Stephenson admits, "but it becomes less and less relevant these days."

Most surprising of all was the actual build time for Jim Henson's Creature Shop to deliver all of this stuff — about eleven weeks! "Following a four-week design phase, during which drawings and clay maquettes were rendered, our creative team initiated the complex build phase," says Stephenson. "Working from our facilities in London and Los Angeles made it possible to successfully complete the build under very intense time constraints."

As for ILM's involvement in the project, Stephenson comments, "Building the classic Flintstones characters for the big screen was a tremendous challenge. Combining ILM's computer graphics effects with The Creature Shop's animatronics capabilities allowed us to create sophisticated creatures with a new dimension of realism. I think we are likely to see many more partnerships of this type in the future — which is very exciting."

—RM

needed as big a stage as possible at Universal, where Michael Lantieri, who had built all of the dinosaur interfaces for *Jurassic Park,* had engineered a full-scale version of the Ptero-plane cabin. It was articulated on these big cables, and grips slowly turned the cab as if the Ptero-plane was coming into frame and getting ready to dive. Meanwhile, we were on a really fast electric crane with a gyrosphere to stabilize the camera, flying right over the heads of the actors in the cab as they were veering off. We had fans going so everything was flapping, to get as much dynamism into the shot as we could."

Dippé also supervised the shooting of the water background plate which became home to a couple of lovesick sea monsters. "I went on a second-unit shoot with camera pilot Bobby Zee and director of photography David Nowell," he says. "We finally found the perfect area, a magical landscape at Lake Powell in Arizona. We flew really low over these wacky little arms of stone and then over a cliff, which became the natural dividing line between our live-action and miniature photography."

If anyone's wondering what place miniatures have in the post-*Jurassic Park* effects lexicon, the town of Bedrock is proof that the art is still alive and well. "That was one of the biggest miniatures ever built at ILM, primarily because the materials used were organic — lots of stone and plants," says effects art director Ty Ellingson, who designed the town. "It was 47 feet across by 35 feet deep and seven feet high. We could've done Bedrock as a CG effect, but it would've been problematic because of the huge palette of materials. We were also doing a forced-perspective gag, so it just made more sense to do it as a traditional in-camera shot. By using a model, we had good parallax when the camera rose up, and since we had to go from reality to this artificial world, it made sense not to make the total

leap into CG."

The powers-of-ten shot was the first effect started and the last finished, so animation supervisors Armstrong and Strauss both worked on it, adding countless CG elements. "That shot just goes on forever," Strauss marvels. "It incorporated so many different elements that a number of TDs worked on it. We animated Dino in the car at the drive-in; flew into the Univershell logo, which was all 3-D animation, then through clouds, which were all digitally composited; and finally revealed the Ptero-plane, which Eric started animating and I finished. Then we flew over the live-action lake; Dave Andrews animated the sea serpents while Carl Frederick used special shaders to froth the water around them. Then we segued to the miniature Bedrock, over which Pat Myers animated some CG cars and I animated the Ptero-plane coming in for a landing. That entire shot was mostly TD work, so our CG supervisor, Alex Seiden, oversaw most of it, but it was a real combination of everybody's skills."

In fact, the same could be said of the entire project. While *The Flintstones* hardly seems poised to become a massive, groundbreaking phenomenon like *Jurassic Park*, this ambitious homage to the "modern Stone Age family" proved a greater challenge than anyone at ILM expected. "*The Flintstones* was a natural progression from *Jurassic Park*, and a good change of pace," Mark Dippé observes. "It was campy and over-the-top and there weren't any monsters waiting in the bushes to bite your head off. I love wacky cartoons, and Tex Avery's one of my heroes, so the comedic angle was really interesting. And now we have a fur system at ILM that we can use in every single movie from now on. So *The Flintstones*, believe it or not, is not just a silly, fun-loving family affair; it also involved some serious experimentation!"

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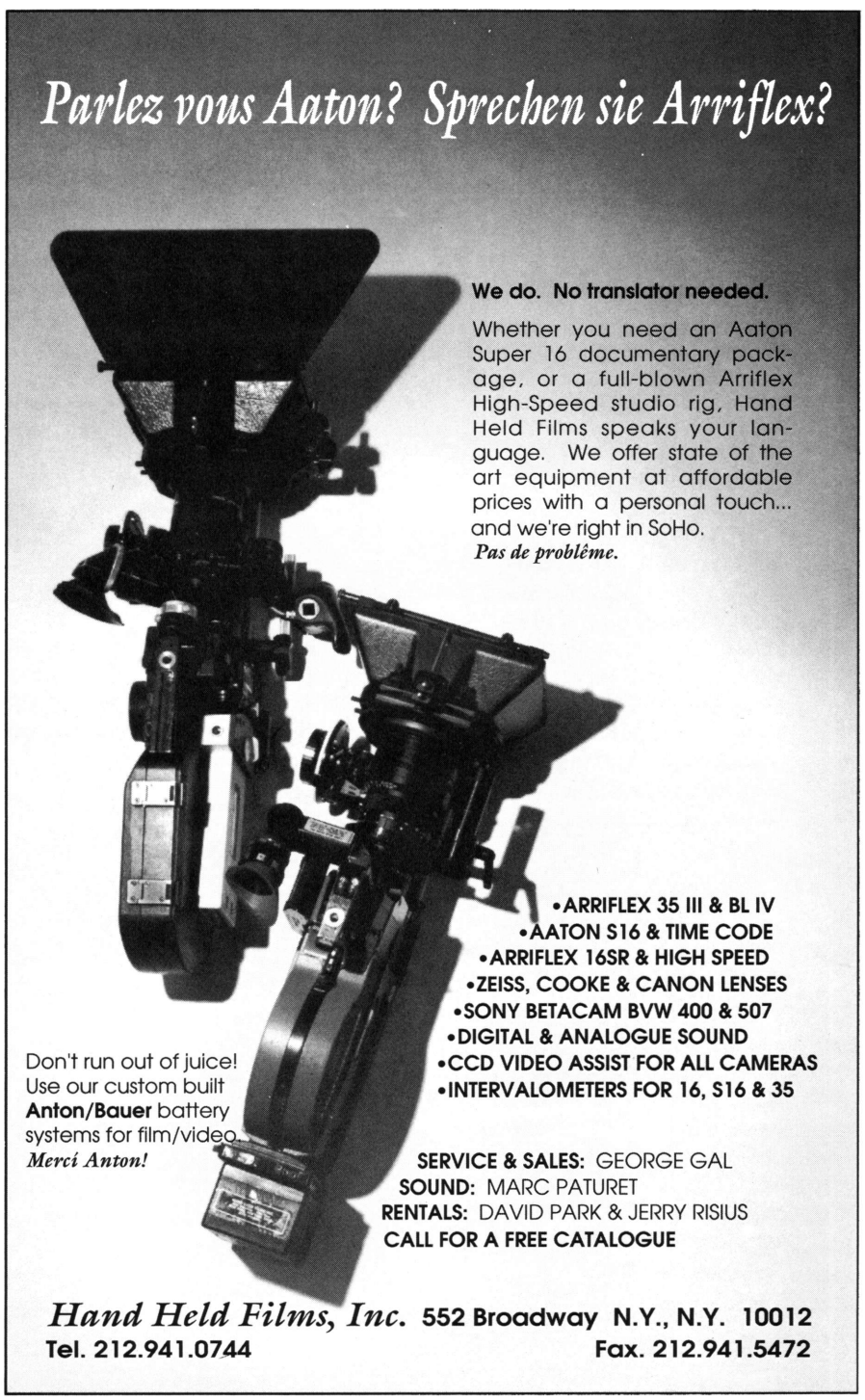
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CGI on a Shoestring Budget

Using affordable digital techniques to catch the audience's eye.

by Les Paul Robley

In his science-fiction stories, writer Arthur C. Clarke has been surprisingly accurate in anticipating certain future developments. Of particular interest to the film community are his "think movies," dreamlike film scenarios created by a person hooked to a home computer terminal. Who would've thought we'd see even a flicker of think movies before the year 2001?

Some effects artists could see the writing on the wall after watching the tentacle from *The Abyss* rear its watery head. Some even feared that traditional full-size creatures would be things of the past, especially after hearing Steven Spielberg remark that if he'd known computer-generated images (CGI) looked as good as they did, he would never have had the large-scale dinosaur models built for *Jurassic Park.*

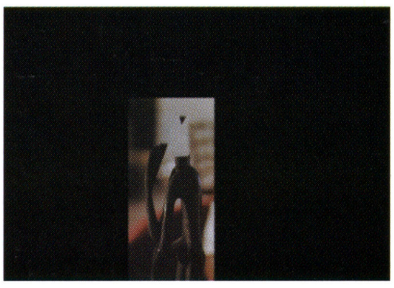
CGI is becoming faster and more economical by the day. Producers can now afford to make effects shows at a price that won't break studios' budgets. Cost-conscious filmmakers choosing between constructing a model or creating a computer graphic are finding that all the below-the-line costs equal the price of a computer scan, and the rendering looks just as real.

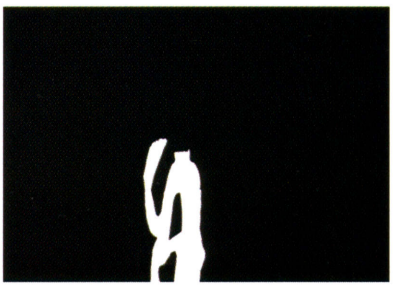
Thus far, film-quality CGI has been out of reach for most low-budget producers. Either it was prohibited by the expense of Silicon Graphics (SGI) platforms, or relegated to the realm of video and television productions. But, as computer prices continue to plummet and chips become more powerful, more and more filmmakers will be able to sample the goods without blazing a trail to the poor house. Now, more digital film recording houses have made themselves available as third-party service bureaus, aggressively marketing their scanning/recording services, so prices are dropping. Companies like Dream Quest's Motion Pixel, Pacific Title Digital, RGB Laboratories and Optical Cinema Service at one time relied on proprietary file formats which made it difficult for low-end computer users to tap in. Now they accommodate several of the most popular file formats, such as PICT, which almost anyone with a computer system — from SGI to Macintosh to Amiga — can utilize and afford.

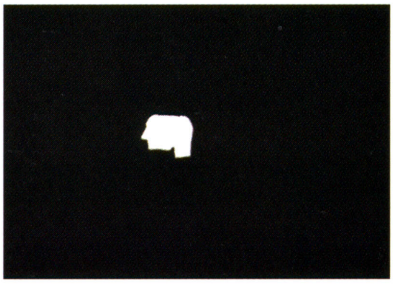
Paul Gentry, visual effects supervisor and director of photography at VFX Digital (Full Moon Entertainment's digital right arm), realized early on that VFX would have to acquire an in-house computer workstation for CGI and digital compositing if the company wanted to produce science-fiction and fantasy films economically. "The reason we set up this department is because we do so many genre films here and we have so many effects shots," he said. "For years, the houses around town have charged a premium for bluescreen. I'm trying to make bluescreen look like nothing, a minimal expense. Also, I want to obtain control of the shots right under the auspices of the effects supervisors and directors who work here, so they won't have to make time-wasting trips to the local effects house checking on shots. The idea is to turn out more shots for the same kind of money than just a few bluescreens. We can now do fifty percent more shots since we're doing them in-house, and we're not worried about a profit margin or overhead.

"The quality of work put out by Kodak, for example, is very high, but so are the prices, despite recent reductions. You almost end up paying the same amount for an average optical bluescreen composite as you'd pay to simply scan a couple of elements and record the image to film. Ideally, you must reduce these scanning costs down to $1,000 per shot or less. The studios don't mind paying prices for top scanning and recording work, but they have the budgets to [afford it,] and that is something we have to compete with in terms of production value. Today's audiences are now routinely seeing top CG and bluescreen work on TV, let alone the big screen."

Unlike some other low-budget CGI companies, Full Moon is trying to accomplish everything at film resolution. Even though most of their releases are direct-to-video, they are trying to anticipate new technologies such as HDTV. That way, no matter what format comes out in the future, their effects will look decent. The company also recently produced a theatrical feature, *Shrunken Heads.* By compositing with a relatively high resolution of 1.5K X 2K, Full Moon hopes that their special effects will compete with a normal live-action 3K X 4K 35mm film resolution image. The only other alternative would be to composite in video resolution and up-res the image from 525 to 2000 lines with services such as Digital Magic's Vision Magic or CIS' E-FILM system process, but the result is not comparable in look to 1.5 X 2K







In the final composite at left, Freddy the shrunken head carries a switchblade in his mouth, circles a wooden statue, and hacks away at it with his knife. The accompanying elements include the model head mounted on a blue pole attached to a model mover and placed before a blue screen; a frame cut of the previously photographed background plate; and the background plate itself. Computer animation was used to make the interaction more dynamic. A more thorough dissection of economically executed shots such as this will appear in Parts II and III of this series.

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Basic Equipment

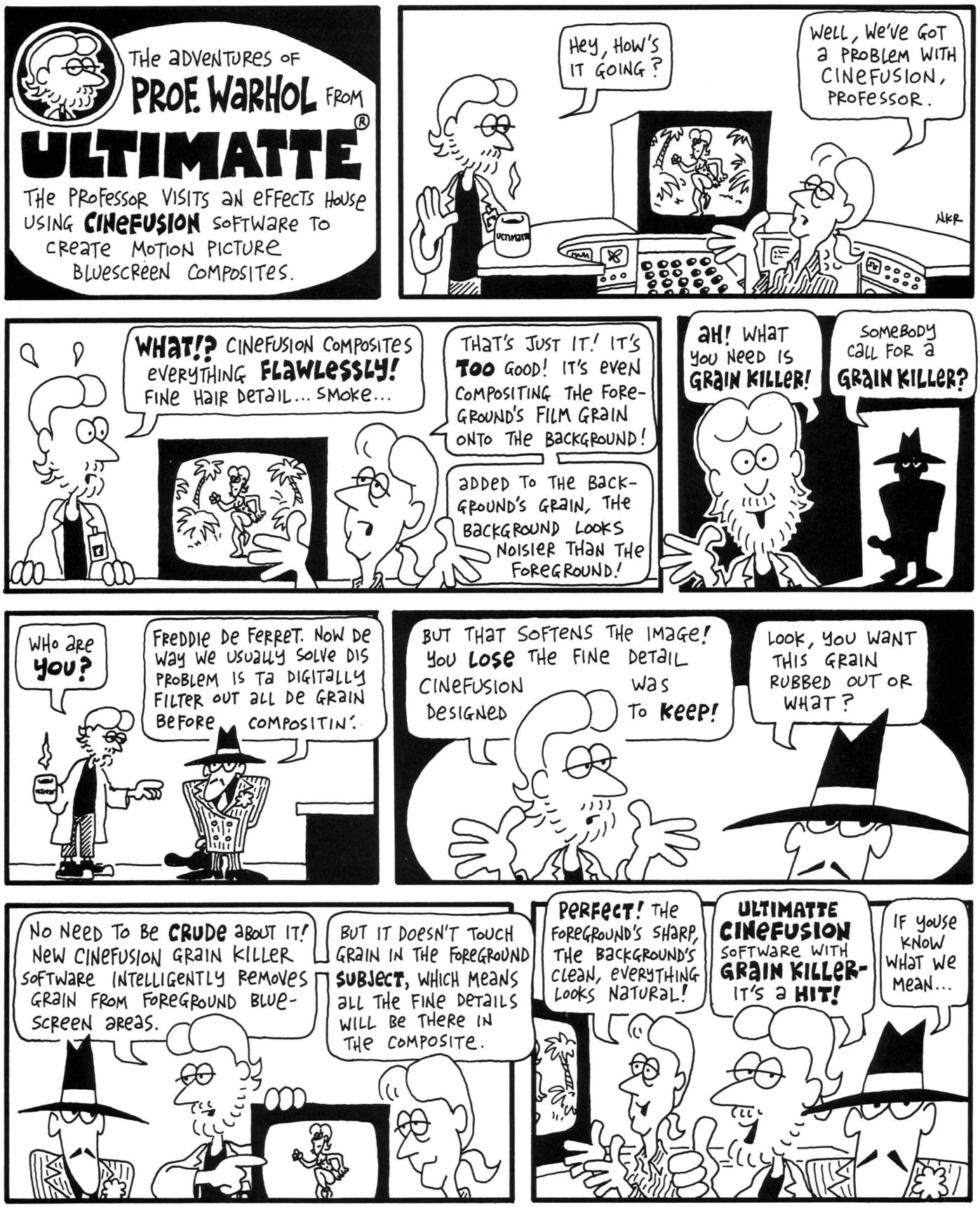
The equipment Full Moon uses in its two computer workstations and one rendering station is bare bones at best, but has been more than adequate to perform some eye-popping effects. Constituting an investment of $50,000, the hardware consists of five Amiga 4000s utilizing the advanced AGA chip set with Motorola 68040 processors and Video Toaster 3.0 software (Newtek has since released version 3.1); three Quadra 950 Macintosh computers equipped with 80 megabytes of RAM (the renderer contains 256 MB RAM); two Exabyte EXB-8500 tape drives; five 3.4-gigabyte hard drives; small standard SyQuest 88 MB removable drives as an easy way to quickly transfer large files; one 1.3-GB magnetic-optical eraseable disk machine, whose advantage over a SyQuest drive is the ability to transfer much more data on a disk — 525 MB per side; two WaCom UD1212 Graphics tablets for digitizing flat artwork; an Epson and Nikon scanner to transfer up to 2700 DPI 35mm 8-perf slides and negatives for quick transfers that sometimes negate the need for shooting and transferring expensive static background plates; and three Panasonic Panasync C1795e monitors.

"The choice of monitors is a real source of contention because we're finding that some of these so-called high-end monitors are not very sharp all the way across," observed Gentry. "The Panasonic is a little-used monitor in the industry, but has the distinction of being very sharp and bright all the way across. There are also other monitors, like RasterOps, which are very good, but you really need to check out the picture quality up front, even on name brands like the SuperMac line, since this will be your window to the digital image and all of your compositing decisions will be based on it. As far as hard drives, we would've liked to have gone with the faster, next-generation technology Seagate drives, but they're not out yet and the need is now."

Full Moon would also like to increase their final resolution to 2K X 3K, which is well within the power of these machines. They are also pursuing their own scan/record facilities to further cut costs and turnaround time. According to Gentry, a film record system made for the military by Celco (which some claim is on a resolution level with Kodak's Cineon) is now available to the public for about $100,000 (Jim Cameron's Digital Domain has reportedly bought four of them). There are also other film recorders coming out from Kodak and a new version of the Cine II, dubbed the Cine III, coming out from RFX. "But as equipment gets better, you naturally want to increase the resolution and software demands on it, which slows up the machine," Gentry admitted. "So, you're almost trading off a lot of these media improvements for a better-looking image [and] cooler image manipulation."

Gentry also employs a large motion-control camera rig designed by systems expert Steve Switaj. It was modeled after the Tiffen rig and built by Precision Machine Company, but modified with a 12-foot arm. The moco system contains the latest Kuper software on an IBM 486, equipped with the new synthetic axes channel movement. By introducing a known lens offset within the x-y-z Cartesian coordinates, the software will calculate this offset into any move, thereby simulating a nodal pan, tilt or roll used for accurately flying miniatures against a blue backing.

Gentry shoots his bluescreens on 5248 or 93 stock and uses two different Ultimatte bluescreens, depending on the situation. "If we have a shot where the actors have to be on top of the blue in a cyc-cove situation, then we go with the normal video Ultimatte blue, since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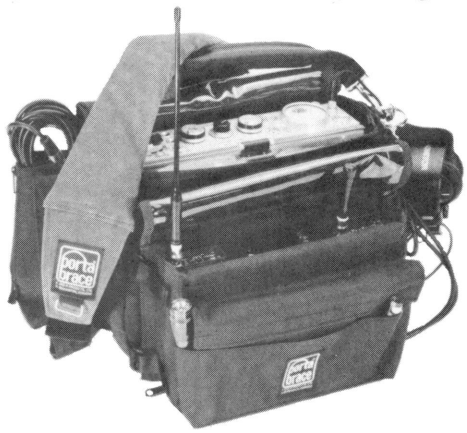

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it's basically shot to key," he said. For a typical flying miniature, he employs the Super-Blue Ultimatte paint, lit with a half CTB gel and half minus green. He over-exposes one-stop from an incident reading taken off the screen (or a half-stop over an 18 percent gray card when using a reflective spot reading).

"You obtain a certain violet-blue hue which works particularly well with Photoshop," he explained. "It has a tendency to go neutral behind the matte so your blurs [and fine hair] don't have any color bias built into them when pulling your alpha channel or mattes with Channel Ops. In Photoshop, if you bring up 80 red, 80 green and 255 blue, you'll see the color we strive to get. This delivers the most fullproof blue keying in Photoshop. We discovered this on our own; no one told us what to look for. In fact, there have been no clear rules since we started this adventure. I have a feeling it's because everyone else is doing a certain amount of fudging with digital as well, at least on the lower end of these technologies. Since digital is a constantly changing science, there are programs coming out for the Mac, like Matte Machine, that will change the rules yet again about shooting bluescreen. They will enable you to key on elements almost regardless of the keying backing color, or allow you to use other techniques like difference matting."

Full Moon began their digital odyssey in September of 1993, and in less than six months had established a full-fledged digital workstation unit producing CGI and digital compositing, just like the big boys. The major difference, however, is that they did it economically for their own in-house sci-fi entertainment.

Basic Software

Full Moon relies primarily on LightWave 3D with its enhanced features for the Video Toaster 4000. It has the ability to render and display animations

directly from the Toaster Switcher in full-screen, 30 frames-per-second, real-time playback with 256,000 simultaneous colors, allowing six full seconds with only 16 MB of fast 32-bit RAM. In addition, the rendering speed increases by 10 to 20 times over the older Toaster, with improved image quality due to new anti-aliasing routines that automatically locate and smooth jagged edges. Partial screen animations can easily be keyed over live video using alpha channel drop shadows. There are also cards like the Raptor that can enable the Toaster to render at blistering speeds, but at a cost of around $15,000.

Shunning SGI 'glamour software' such as Flame or Matador because of their high single limited license costs, Full Moon's two digital composite workstations incorporate Adobe Systems Photoshop 2.5.1 and COSA AfterEffects 2.0 software, two standards for image processing on the Mac. According to one of Full Moon's digital designers, Chris Biggs, who began his film career as an (analog) makeup effects artist on *Critters* and the *Nightmare On Elm Street* films, this advanced version of Mac software "allows for the most image control of any programs available. A program like Debabelizer can transfer from any file format to another and resize it. If we have a QuickTime image (a sequential number of little images in one file), this will break them into separate files. It also does batch processing. If we have a 125-frame shot, we can set up the parameters, hit go, and walk away, and it renders for us while we do something else."

Biggs is likewise fond of CD Software's $200 Quick Keys program, a smart key which functions like a macro, completing the majority of the work in one easy stroke. He can set it up to draw the outlines around each character or foreground object in front of the bluescreen, invert the image into a black mask, then delete all unnecessary objects in

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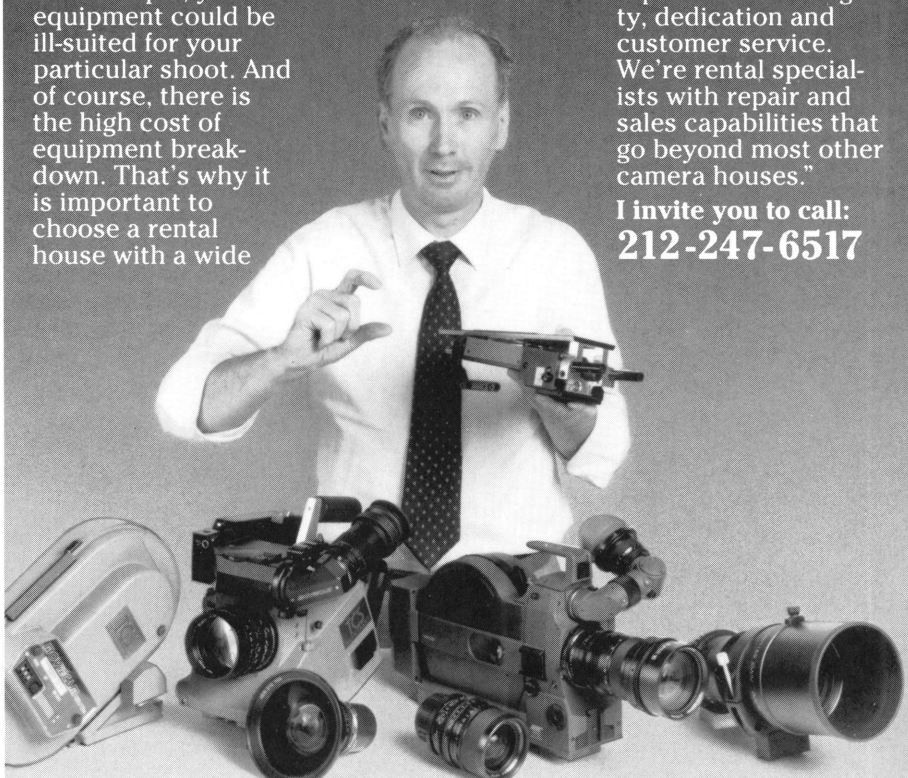

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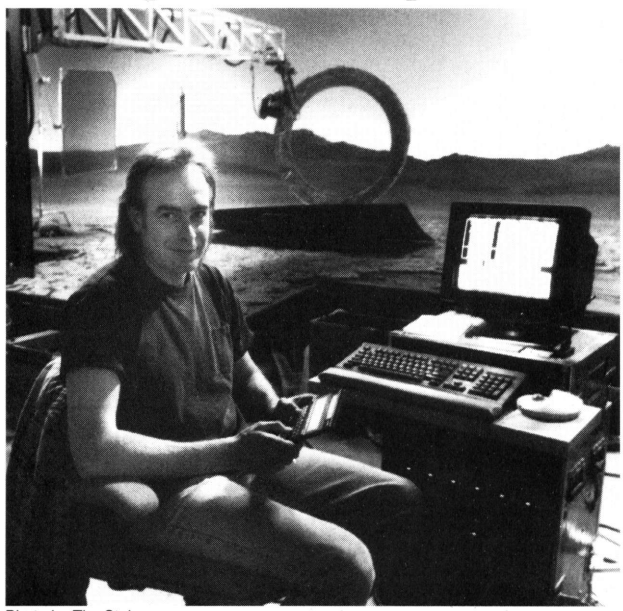

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frame via split-screen garbage mattes, save the file and close the window — all in one keystroke. Since this matting must be performed for each frame of film, doing the same procedures over and over can be extremely tedious, especially if nothing changes much in frame. Quick Keys cuts down the tedium and time-consuming labor. So far, an automatic rig or wire removal program (à la ASDG's No Strings Attached for the SGI), doesn't exist for low-end computer platforms like the Mac and Amiga. Presently, wires or blue pylons (which suspend an actor or object against blue during filming) must be removed, or painted out by cloning the same value background and replacing this over the wire by hand in a time-consuming frame-by-frame process.

Using NSA, an operator indicates the approximate location of each wire on a few keyframes — usually the first and last frames of a shot. NSA then automatically detects the actual wire locations in each frame. The wires are removed by repainting them with colors synthesized from the surrounding area. Both the detection and removal steps are guided by adaptive artificial intelligence techniques which result in reduced operator intervention and increased quality.

According to Gentry, an automated wire removal program may be slated for the Mac down the line. VFX currently relies upon tools in Photoshop to delete unwanted objects, such as puppet rods or dirt, from the frame. "We normally don't have this problem since rod puppets and models are covered with the same blue paint as the background screen and they generally drop out. If not, it's just a flick of the mouse in roto and they're gone."

Watch upcoming issues of AC *for Parts 2 and 3, which will include a step-by-step breakdown of a typical shot.*

Klushantsev: Russia's Wizard of *Fantastika*

Part 2 of 2: Effects expert's lifelong struggle continues even after his retirement.

by Lynn Barker and Robert Skotak

Translations by Gregory Wain and Buck Shomo

In Part 1, the pioneer Russian visual effects director told interviewer Skotak about the difficulties of making fantastika *films in the Stalinist era. He was discussing in particular the methods used in the making of a space travel picture,* The Road to the Stars.

Perhaps the most demanding challenge on *Road to the Stars* was creating the illusion of believable weightlessness. "The ordinary theatrical or circus methods of hanging in a girdle wouldn't do for us," Klushantsev notes. "That's good enough when the actor has to fly straight ahead in a line or in a circular fashion, not changing his position. We had to do slow floating with somersaults, turns, etc. In all of my space pictures we employed [several] methods of imitating weightlessness. The first method was the 'vertical shot.' The actor is dressed in a strong girdle and hangs from the ceiling via a thick steel rope, pulleys, and counterweights. The camera stays on the ground, the objective vertically above. The rope by which the actor hangs is hidden from the camera by his body."

To be effective, such a shot needs plenty of vertical clearance. Klushantsev and crew had to cut a hole in the stage floor to put their cameraman in the basement, again arousing the ire of the studio bosses. This method was used for shots in the spacecraft cabin and for shots depicting the building of an orbiting station in space. When Stanley Kubrick made *2001: a Space Odyssey* in 1968, he claimed to have been first to fly actor/astronauts on wires with the camera on the ground, shooting vertically while the actor's body covered the wires. But Pavel Klushantsev had actually used the technique years before.

Gaining camera mobility was another challenge, since Popular Science Film Studios were both ill-equipped and the poorest in the Soviet Union: "At that time, we didn't have any kind of camera crane. The carts [needed] for shots with action were handmade of wood on wooden rails." To give some of the space scenes a floating feeling, it was necessary to photograph the hanging actors using compound moves, which necessitated the construction of a complicated track system in the studio basement. "We made lengthwise tracks with a narrow cart on them," Klushantsev explains. "In a second cart on the 'crosswise' tracks, the cameraman was lying [stretched] out, with a scaffold holding the camera mounted over him. During the shots, I was with the camera, watching and moving in unison, skating lengthwise and crosswise."

For many shots, space-suited circus acrobats were used as stunt doubles. Klushantsev was particularly concerned when faulty equipment al-

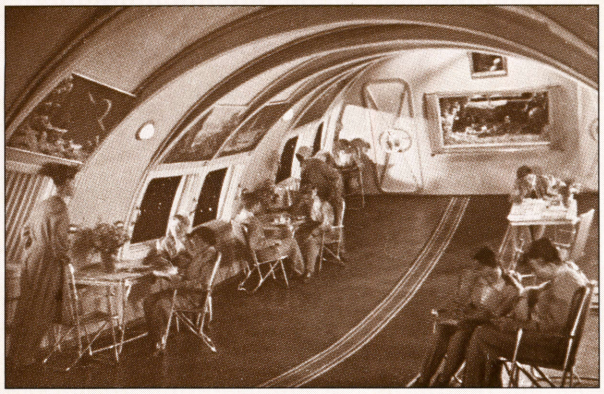
A poster highlights Klushantsev's work.

most resulted in tragedy: "Once, during a shot of a cosmonaut hanging against the background of Orion, the double felt that the girdle was weakening on him and he began to slip downwards. Downwards meant [landing on] the camera, which would have smashed into the cameraman's face, killing him on the spot. Luckily, the quick reflexes of the acrobat snapped into action. With a sharp motion, he managed to flip over and grab a rope with his hand. We later found out that the straps of the girdle had rotted through and ripped off."

For other shots, the weightless effect was accomplished in another novel manner. "We manufactured a latticework 'barrel' four meters in diameter and six meters long out of wooden beams. We cleared out the workshop so that the barrel — which represented the cabin of the spacecraft — could roll back and forth across the floor. At the end of its path we made ramps so that it didn't smash into the walls but would roll up the ramp and roll back. We mounted set decorations — [as well as] all of the lighting equipment, the cameraman and his camera — inside the barrel. [The cameraman] was

Photos courtesy of Robert Skotak and Pavel Klushantsev

Near right: ***A concept for a space station interior with upsloping floors similar to those later seen in*** **2001: A Space Odyssey.** ***The angled floor represents the outer curvature of a classic "donut"-type space station from*** **Road to the Stars** ***(1957).*** **Below:** ***Klushantsev instructs the impressive Robot John — here carrying two actors — on the set of*** **Planet of Storms** ***(1961).***



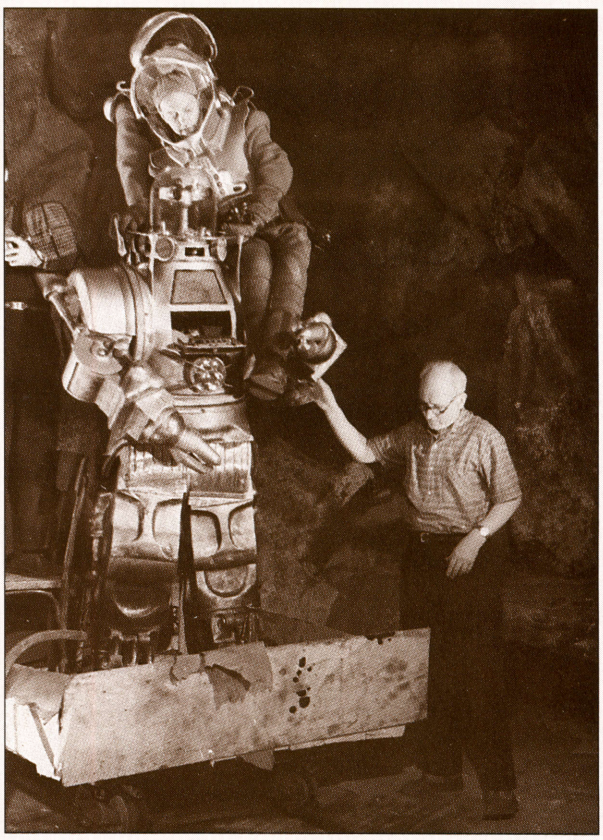
in a special long box, fastened with straps, so that during the rolling of the barrel, he would be first right-side up, then upside-down. Two actors worked in the scene. One was firmly fastened to the roof in a chair solidly attached to the set. The other was able to freely walk or jump on the floor, walls or ceiling of the 'cabin.' The camera angle was always in the same position and the rotations weren't observed. Our cosmonaut freely crossed from the floor to the wall, then to the ceiling and walked about. For greater effect, the shot was overcranked and the action seemed even more slow and floating. In any case, it made the onlooker and the film workers feel perfectly nauseated."

While *Road to the Stars* was being edited in the autumn of 1957, Sputnik was launched. Officials demanded that this event be included in the film as a propanganda ploy. Footage was added and the film was released on Nov. 7, 1957, in Leningrad, Moscow and Kiev. It eventually circled all five continents with great success and a portion of the project was shown to Americans as part of the CBS series *The 20th Century,* hosted by Walter Cronkite.

With this undeniable success, party officials finally understood that films about space travel and exploration could be very positive propaganda. What was discouraged in the past was suddenly given an official seal of approval. *Road to the Stars* also established Klushantsev as a "first class producer," allowing him to finally achieve his lifelong dream "of making artistic films, with storylines and actors — [moving] into 'big' cinematography, working in the fantasy genre with space themes."

He was at last in the position to make a film like *Planet of Storms,* which represented the biggest leap yet for Klushantsev; the project offered opportunities to experiment with newer techniques to improve on illusions such as weightlessness. The "floating" segments in *Storms,* for example, didn't use stunt doubles. This time around, Klushantsev wanted to use well-known performers. "We prepared a special crane with a long narrow boom which had a rotating fork with hoops at the end," he recounted. "During the shots, we positioned both the actor and the crane so that the actor's body covered the equipment. He could be in a vertical, lying or sitting position."

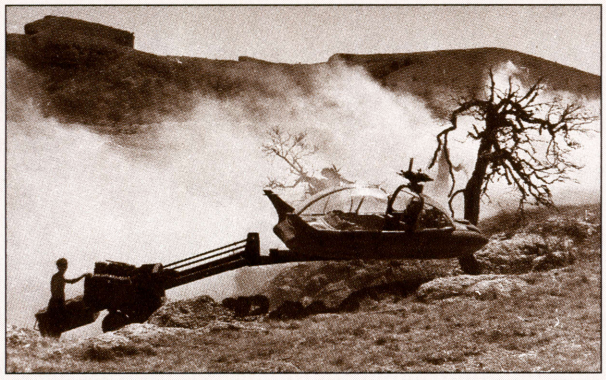
Planet of Storms was not Klushantsev's first-choice project, however. Prior to starting the film, he'd developed a concept that he passionately believed in — a screenplay for a full-scale artistic film called *The Moonstone.* Unfortunately, the film never got off the launching pad. Klushantsev described the plot thusly: "In each of three developed countries — the U.S., U.S.S.R. and Germany — teams are secretly preparing for a flight to the moon. The countries find out about each other's work and agree to consolidate their priorities for [future] history. Whoever brings back [to the Earth] a 'piece of the moon' — a moonstone — will be considered the lunar pioneers. All three rockets are launched almost simultaneously. They land on the moon not far from each other. But all three have difficulties upon arrival. For each there is one solution: mutual aid. They bring back a moonstone found, taken and delivered by a mutual effort."



In *The Moonstone,* it was important to Klushantsev that everyone should finally stop dividing the world into antagonistic blocs, "that we should take each other's hand and jointly conquer the planets as a singular humanity." Unfortunately, his dream was not shared by the high-level Party officials in Leningrad: "The opinion of the Party authorities was that we [shouldn't] cooperate with anyone in space affairs. [They felt that] our country was able to succeed without any help — [that] we could bring back a lunar rock all by ourselves."

Once again, the Cold War had stifled artistic freedom, and Klushantsev was forced to collaborate on a new screenplay that would meet Party standards. A year's work on *The Moonstone*, without pay, had been wasted.

Several drafts and arguments later, he and a new writer, famed author Alexander Kazantsev, agreed to abandon the moon for a trip to Venus, an idea that became *Planet of Storms*. Kazantsev's story ideas stemmed from a strong belief in a *Chariots of the Gods*-style theory that mankind had been visited by ancient astronauts. The more practical Klushantsev was not all that enthralled by the direction the story was taking (the plot centered



around a group of stalwart cosmonauts who face a number of mechanical and natural disasters to discover ancient life on Venus), but by this point was ready to do anything to get the cameras rolling.

The script was approved and Klushantsev put his team together. His old friend Lavrent'yev again served as effects cameraman. Props and models, too extensive for the meager studio shops, were consigned to various factories that were expert at designing practical machinery; for example, an aviation factory constructed the realistic controls in the spacecraft cabin. Klushantsev had been inspired by the American film *On the Beach*, which featured a very believable submarine set. "I wanted to show a spacecraft with the same degree of realism as the submarine in this American movie," he said.

The "vyezdekhod" — an impressive flying car — was created by designers at an automobile factory and built in their workshop. (Interestingly, the craft bears some resemblance to the "landspeeder" which Luke Skywalker would pilot some 16 years later in *Star Wars*.) "The flying car's motion was carried out very simply," elaborated Klushantsev. "A crane built especially for that purpose rode along rails. The car was sitting on the crane at a single point so that it could turn a complete circle. It was raised and lowered by the boom, and the body of the car hid the crane from the camera. For shots of the car over the sea, the vehicle was hung from a boom welded to the stern of a barge which was towed by a cutter."

As on *The Secret of Matter*, near-disasters at sea plagued this picture. At one point, the floating

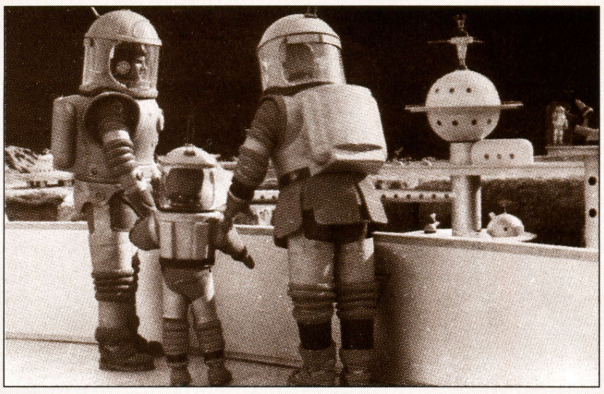
Near left: ***The all-terrain "vyezdekhod," or "flying car," used by Venusian explorers in*** **Planet of Storms. Far left:** ***The secret behind the flying car: a cantilevered, counter-weighted, custom-built crane hidden by terrain features.***

car and actors were nearly drowned by a huge wave. On another day, as the car was being towed over the sea to a beach location, the vehicle filled with water and sank to the bottom. It was recovered by divers and repaired, and filming continued.

"Robot John," an impressive automaton brought along on the Venus mission to aid his human cohorts, was designed collectively by all of the picture's artists, under Klushantsev's guidance and encouragement. The robot body was built by Aleksander Yakovlevich Nadyezhin and a crew from the Design Kombinat at the Union of Artists of the U.S.S.R., a group ordinarily involved in the design and construction of props for museums, exhibitions and store windows (the crew also assembled the spacecraft and other miniatures based on Nadyezhin's technical drawings). Inside Robot John was a man named Prudkovskii, a famous wrestling champion who could carry two men on his shoulders. He actually performs this feat in the film, during a scene in which the robot helps two cosmonauts cross a stream of molten lava.

Realistic undersea exploration shots were accomplished in the studio by a combination of techniques. "The floor was covered with a thick pile carpet that looked like moss," explained Klushantsev. "We spread out a heavy white aerosol fog [oil droplets sprayed out by a stream of liquid carbon dioxide]. It sank into the 'moss' and you couldn't see it until you set down your feet. Then it would lazily rise up, exactly like silt from the bottom of a reservoir under a diver's foot. A 'tub,' constructed of a steel welded frame glazed with thick windows, was hung over the actors. It was filled with water, ten centimeters deep. A spotlight, mounted above, shone down through the tub onto the actors. The water would splash and the light would refract into a streaming patch of light." This lighting trick, in combination with the fog, created the look of cloudy water. To complete the underwater illusion, a narrow aquarium with live fish was placed in front of the camera.

For other sequences, Klushantsev and his crew created a convincing volcanic eruption complete with smoke and "white-hot" lava. It was important that the lava should appear brighter than white light: "To create the effect [we used] an oily



Near right: ***The 1964 short*** **Luna** ***featured a fancifully designed base and space survival gear in elaborate perspective shots such as this.*** **Far right:** ***For his short*** **Mars** ***(1967), Klushantsev created a convincing Martian vista by placing a full-size foreground against forced-perspective background elements. Note the space traveller's space-suited canine companion.***

'dough' with white chalk added. The pyrotechnicians mixed in an oil which quickly evaporated, giving [off] a white smoke. The surrounding hills were painted black with carbon soot. The cameraman compensated for the overall excessive darkness and gave the model a little more light than for normal exposure. [The white chalk 'dough,' now, in effect, overlit, glowed as if luminous.] The result [was] a 'searing' lava which you could dip your finger into!"

Various perspective combination shots were used to depict the spaceship "Sirius" on the surface of Venus. According to Klushantsev, "The whole ship at full height was built at roughly one-fifth scale. It stood about 50 meters from the camera. Its lower part, at true size, was placed at a distance of roughly 75 meters from the camera. The actors worked at the base of the ship in the far background."

One of the action sequences of the film featured a pterodactyl-type "bird" which attacks the cosmonauts as they explore the sea in their flying car. This was "an ordinary puppet, prepared for us by the artists of the Leningrad Puppet Theater under the supervision of dedicated puppet artist Valentina Vasil'yevna Malakhiyeva, who also managed the theater. The pterodactyl's wingspan measured roughly one meter. It hung from a steel pipe pushed through the backdrop. The pipe was hidden from camera by the bird's body. In case the bird tilted too strongly and revealed the pipe, we utilized a smokescreen in the background. Three puppeteers, including Malakhiyeva, ran the bird — one swinging the pipe, the second turning the head and the third flapping its wings."

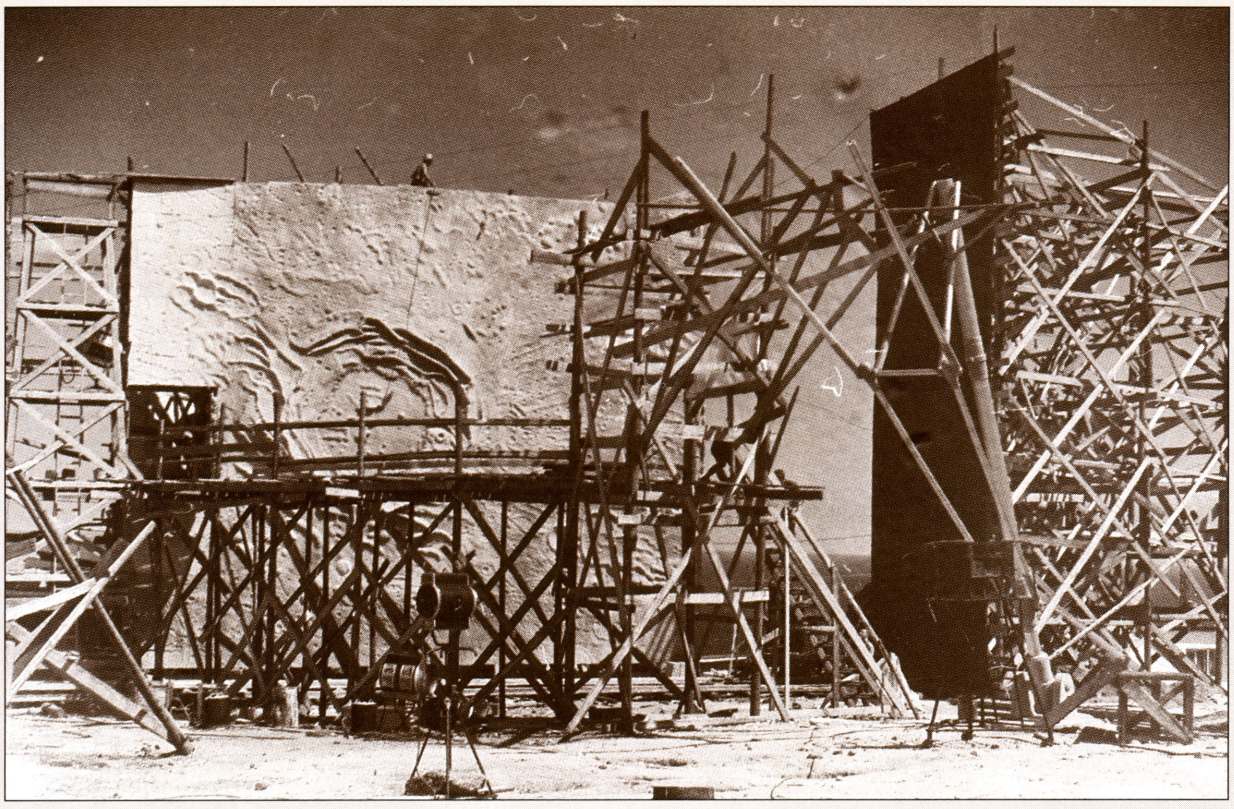
Although *Planet of Storms* gained popular acclaim, Klushantsev wasn't satisfied. The screenplay never pleased him, and he thought the actors could have been better. Although the Party authorities in Moscow approved the film, the press was influenced by a screening for the Minister of Culture, an incident that fully illustrates the power and negative impact of official opinionmakers under a Communist regime: "Sitting in the theater and watching the film with [the Minister] were film workers and reporters who were waiting to find out the spirit their reviews should take — to praise it or to criticize it. When the picture ended and the room lights came on, the reporters surrounded [the Minister,] notebooks ready. 'What's your impression?' was their common question. She thought for a moment and said, more or less, 'In general, nothing. What I really didn't like was when the female cosmonaut cried. A Soviet woman cosmonaut shouldn't cry, even under such circumstances.' That immediately influenced the reporters and the press was cold."

A screening for the cosmonauts at Star City, however, resulted in high marks. They commented that it was exactly how they imagined a space expedition.

Planet of Storms was seen by approximately 20 million people in the first year and was sold to 28 countries around the world, finding its greatest success among young children. It brought a large profit to the country, but marked the beginning and end of Klushantsev's "artistic" filmmaking. He considered the picture a labor of love; four years later, he returned to producing popular science films.

The next of these, *The Moon,* was produced in 1965 on a much lower budget than *Planet of Storms.* It successfully presented a colonized lunar surface with workers and families living in an elegant, multi-tiered lunar "city" designed by renowned science-fiction artist Yuri Shvets, with whom Klushantsev had collaborated years earlier on *The Universe.* Rocket trains, propelled by an enormous battery, traveled over the surface in horizontal tubes while a convincing, spider-legged lunar rover roamed the hills and craters. "*The Moon* won a gold medal for successful union of science and fantasy at a film festival in Trieste," Klushantsev recalled. "*Paris Match* sent a correspondent to question me about the rover. He was convinced that I had depicted some kind of government secret — that the rover already existed and that the Russians were already far ahead in the conquest of the moon. I explained to him that Shvets and I thought it up one night over tea. He didn't believe me."

The Klushantsev creative team faced an interesting challenge in filming a believable moon landing on the edge of a crater. "The duration of the sequence was two and a half minutes. Of course,



***A huge representation of the moon's surface was created by Klushantsev's crew to stage an elaborate landing sequence for the short* Luna.**

with our budget, we couldn't even dream about an enormous crane. And even if we'd had one, it could hardly have carried out a curved trajectory with a floating motion. Shvets and I decided to film with a camera lying on its side. That way, the camera's motion wouldn't have to be on a vertical plane. It could ride horizontally on rails in a cart. We built the [moonscape] set on its side. It was 16 meters high. We had to carry out the shot in slow-motion. We placed a specially prepared reduction gear in the camera, shooting roughly two frames per second. The vertical position of the moon's surface caused us to wait half a day [before] filming the crater Copernicus, to get the beams of light which occur during sunrise, when it is horizontal."

In the film *Mars* (1968), the first Earthling to set foot on the red planet landed on all fours — a space-suited dog got the honor. "We spent a long time training the dog and, in the end, it eagerly wore the spacesuit and easily ran around in it." *Mars* impressed a visiting American scientist who wanted to take a copy home to show authorities at NASA. He hoped to purchase a copy in Moscow, but everything became so complicated that he shrugged his shoulders and left without it.

Sadly, of all of Klushantsev's films, only re-edited footage from *Planet of Storms* has received any extensive showing in the U.S. Integrated into lower grade sci-fi and fantasy films, some of the work of Klushantsev and fellow Russian filmmakers Koryukov and Ptushko has been "re-directed" by the likes of Curtis Harrington, Roger Corman and a young Francis Coppola. *Planet of Storms* became *Voyage to the Prehistoric Planet*, directed by Harrington. Much of *Storms* remains intact, but the picture is marred by inferior dubbing and added sequences starring Faith Domergue and Basil Rathbone. A smaller amount of footage from *Storms* was used in *Voyage to the Planet of Prehistoric Women*, starring Mamie Van Doren and directed by Peter Bogdanovich.

Footage from Koryukov's *A Dream Comes True* (1963), a tale of Martian exploration with extraordinarily imaginative effects and design work by Koryukov and Yuri Shvets, was incorporated into *Queen of Blood* (1964), a sci-fi/horror flick directed by Curtis Harrington and starring a young John Saxon and Dennis Hopper.

Mikhail Koryukov's *The Heavens Call* (1959) and Ptushko's *Sadko* were given, by Corman, to USC film school grad Francis Coppola, who re-cut them and scripted in new English dialogue. *The Heavens Call* became *Battle Beyond the Sun*, and featured two Coppola-designed "sex monsters" battling it out on an asteroid. Whereas the cosmonauts in *Heavens* were seen gazing out at a beautiful statue, in *Battle* they are watching very thinly disguised phallic symbols fight to the death. *Sadko* was half-heartedly re-edited, atrociously dubbed and released as *The Magic Voyage of Sinbad*. The names of actors and creators alike were, in the ultimate insult, Americanized: Ptushko, for example, became "Alfred Posco."

In 1970, however, Pavel Klushantsev enjoyed a measure of overdue respect when he was awarded the honorary title of Distinguished Artist

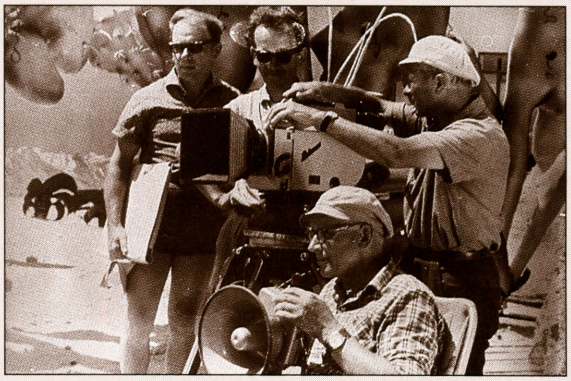
of the Russian Soviet Federated Socialist Republic. He holds other orders and medals, but the most precious to him is a medal "for the defense of Leningrad," his birthplace. He retired in 1972 but continued to dabble in invention and write popular science children's books until 1988.

Sadly, Klushantsev has not been able to spend his golden years in the comfort he richly deserves. He and his retired artist-animator wife live with his son, a computer specialist, and family in a tiny three-bedroom apartment in St. Petersburg, formerly Leningrad. At 83, living on a meager pension, he must spend hours standing in line for food that costs 30 times its true value. Despite the hardships of the past and uncertainty of the present, his legacy and philosophy live on. "I was always in the position of Robinson Crusoe, dressed in hides and getting fire from rocks," he said. "It seems to me that all of our work speaks about the greater things that are important to people, like selflessness, courage, persistence, knowledge and desire. My coworkers and I earned less than our comrades who were making simpler pictures. We made a huge sacrifice for the right to do interesting work. We read few books, almost never went to the theater, rarely got together with friends. We didn't sleep well because we were always risking our careers doing something for the first time. Even with all of that, people worked with me because they loved the cinema more than anything else in the world." ☙

Special thanks to: Pavel Klushantsev, Alexander Nadyezhin, Valentina Malek'Hyeva, Vladimir Kazantsev, Mikhail Koryukov, and the Russian and American Trade Association.

A Note from the Underground

The following is a letter written in May of 1991, excerpted from Pavel Klushantsev's correspondence with co-author Robert Skotak. It chronicles the daunting conditions faced by the filmmaker and his fellow countrymen on a daily basis. Since then, conditions have actually worsened, perhaps as much as tenfold. Will the creative spirit, born of individuals like Klushantsev, weather the storm?



Klushantsev (with bullhorn) and some of his crew during the filming of* Mars *(1957).

". . . Food products and industrial commodities, which are necessary for life, are catastrophically insufficient. It is necessary to search for these items, and if you find them, you have to stand in line for hours. But this is not all. The government raised the prices on all goods three times. The Mafia intercepts commodities until their goods enter the stores and then resells at a higher price, still a few times more than the normal price. My wife and I receive a pension of a total of 400 rubles a month. This is the equivalent of 10 dollars, for everything: the apartment, food, clothing, medical supplies and so forth. In your measure, this is below poverty level. We, of course, do not exchange rubles for dollars; we buy everything in rubles. . . our pension is only sufficient for the most modest food. We aren't starving. But nothing, except food, are we able to buy for ourselves. And this is a miserable existence requiring enormous strength in search and acquisition every day.

"It's necessary to stress the deficit of commodities and low wages which exist in a country run wild. [For ten years,] people. . . have become exhausted from a difficult life, deprivation of religion, loss of conscience. They have forgotten the laws of morality, [and] they have become self-absorbed, robbing each other. There has been an incredible increase in crime, [and] a developing powerful Mafia, spreading in control — hence terrible selfishness, mutual enmity without principles. Suffice it to say that calling for charitable help from Western countries — in the form of sending packages addressed to orphaned children and, most of all, poor people — is useless. Often the proceeds are incorrectly addressed, [and] packages are repeatedly stolen on all transports along the way.

"Of course it is offending. I worked in cinematography without stopping for 45 years. I have eight specialists, an operator, and a director in the highest categories; I have decorations and medals, [and] my pictures received awards at festivals, [as well as] medals and diplomas. And I have no possibility of carrying out the last years of my life in peace and comfort. . ." ☙

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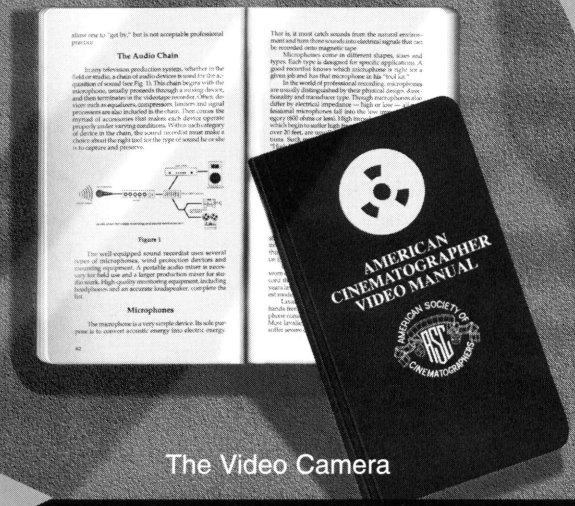

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Written by Frank Beacham, with contributions from field experts. Thoroughly updated and revised.

The blitz of constantly changing video technology has made an understanding of electronic imaging essential to anyone working in the field of cinematography. The ASC Press now fills that need by publishing a comprehensive video handbook which has taken its place next to the oft-consulted American Cinematographer Manual in every cameraperson's kit bag — the American Cinematographer Video Manual.

All aspects of the video craft are covered. Imaging — including explanations of CCDs, luminance, color, contrast, exposure, lighting, lenses and formats — is given special attention, but other chapters include specific, nuts-and-bolts information about VTRs, waveform monitors, time code, audio for video, and battery systems.

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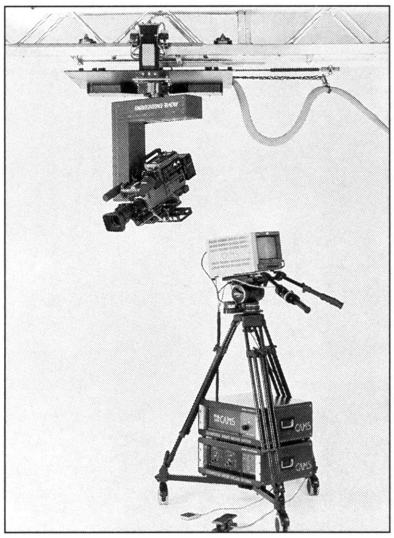


Remote-Control Head

Band Pro's Cams remote-control head provides digitally precise remote camera moves, without cranks or joysticks, for 16/35mm film and video applications. The operator can produce complex remote pans, tilts, and tracking shots by simply guiding a conventional fluid head while viewing a video monitor mounted on it. The motorized slave head is made of rugged, lightweight titanium and mounts at any angle with a standard 80mm Elemack dual safety coupling. The Cams remote head mates easily with cranes, booms, car and helicopter mounts, and the Rail Cams Gliding Dolly. The dolly runs on standard track in floor configuration and can be suspended overhead using Rail Cams track. In both modes, remote tracking is controlled by the camera operator via a proportional balance pedal.

Correspondence between the Cams master and slave units is accurate within .0018 degrees. The 1:1 ratio between the elements can also be precisely altered to 4:1, 2:1, 1:2, and 1:4. This allows smoother moves with long telephoto lenses or greater quickness when shorter focal length lenses are used.

For information: Band Pro, 425 N. Moss St., Burbank, CA 91502, (818) 841-9655, FAX (818) 841-7649.

Animation for Power Mac

Electric Image will release applications of their ElectricImage 2.0 Animation System for Apple's new RISC-based Power Macintosh computers. ElectricImage is a 3-D graphics system that uses higher-end Apple Macintosh and Silicon Graphics computers and imports, renders, and animates objects from popular modeling programs used on multiple platforms. The new version includes greatly improved motion blur effects, deformations (twist, taper, bend), sync sound animations, adaptive anti-aliasing, and plug-ins including Mr. Nitro, Lens Flares, Particle Systems, and Mesh Objects.

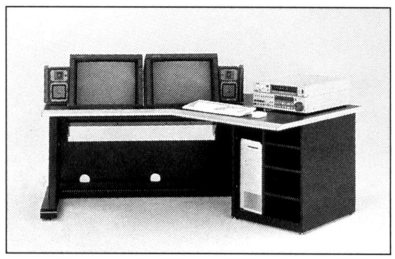
The first application to be available will be Electric Engine for Power Macintosh, a stand-alone rendering engine. This rendering engine will take full advantage of the PowerPC processor-based Macintosh computer's enhanced performance, which will increase the speed of rendering by up to eight times that of a Macintosh Quadra 950 computer. The complete ElectricImage 2.0 application for the Power Macintosh platform will be available by the summer.

For information: Electric Image, 117 E. Colorado Blvd., Suite 300, Pasadena, CA 91105, (818) 577-1627, (818) 577-2426.

Chromakey Software

Imagica's multi-CPU version of Primatte chromakey software runs on SGI Onyx workstations and is based on the 3-D Color Space Polyhedral Slicing Algorithm. The resolution-independent program accepts high-resolution image data input from high-resolution film scanners down to video resolution images. The user-friendly GUI menu enables quick and easy operation with the highest quality, and the professional chromakey composites with no long learning curve for the user.

Imagica Corp. of America, 5320 McConnell Ave., Los Angeles, CA 90066, (310) 306-4180, FAX (310) 305-7563.



Editing Console for Avids

The Winsted Corporation has introduced an editing console developed specifically for the Avid system. The console's lower cabinet is designed to hold a tower CPU and as many as eight hard drives or optional standard 19" rack-mount cabinet. The monitor well accommodates two 20" monitors. An adjustable monitor shelf angles up to 30 degrees for viewing, making the console particularly ideal for long editing sessions. The extra-deep 41" desk provides ample space for a keyboard and a VTR. Work surface is black granite laminate with 3" beveled edge trim of light oak.

For information: The Winsted Corporation, 10901 Hampshire Ave. South, Minneapolis, MN 55438, (612) 944-9050.

HMI; Time Code Reader

Broadcast Marketing's Kobold ENG 200 portable HMI system was designed for on-location news and field production, and can be used with any 30-volt battery belt or its own 110/220 volt AC power supply.

The ENG 200 light head can be easily handheld, mounted on a light stand, or attached directly to the camera. It features quick release barn doors with built-in clips for gels, diffusion filter and 3200 dichroic conversion filter (optional).

The compact DC ballast has a unique mounting system that quickly adapts to all 30-volt battery belts via a velcro hook and universal power cord. It

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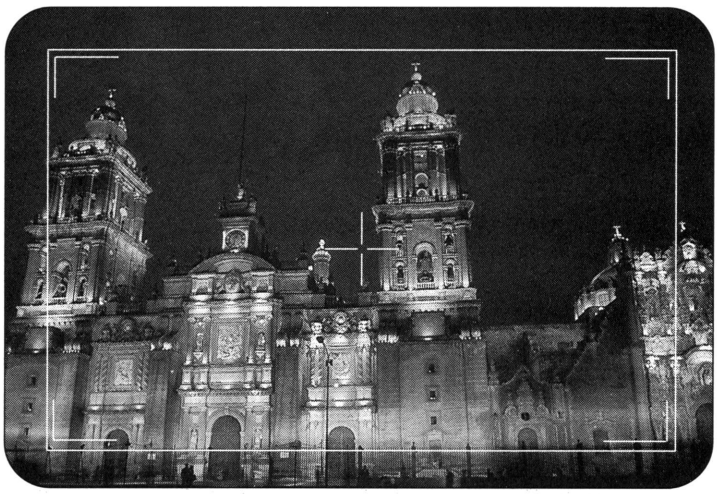

SEE SHADOW DETAIL

Once the exception, low light filming is now the rule. Even when shooting at T2 or less, the viewfinder on the Arriflex 16SR 3 won't strain your eyes or your imagination. It delivers the largest, sharpest, brightest image of any 16mm camera, regardless of stop or format. In fact, the viewfinder on the SR 3 is 25% brighter than the SR 2, and that was *already* brighter than the competition. The SR 3 comes equipped with Arriglow, which provides precise, illuminated frameline markings, in all shooting environments, daylight or midnight.

MORE CONTROL

The offset pl-mount makes it easy for you to switch from standard 16mm to Super 16mm in the field. SMPTE time code and flicker-reduced CCD video are integral to the 16SR 3's design, allowing you access to the latest in electronic post-production. Many of the new electronic features of the Arriflex 535, such as programmable on-board speed changes are included, giving you more creative options than ever before.

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When you spend all day looking through a viewfinder, you deserve the best working conditions possible. Your eyes will appreciate the brighter finder image and the two-time magnifier built into the extender for critical focus adjustments. Warning indications in the finder for asynchronous speed and battery status are displayed instantly.
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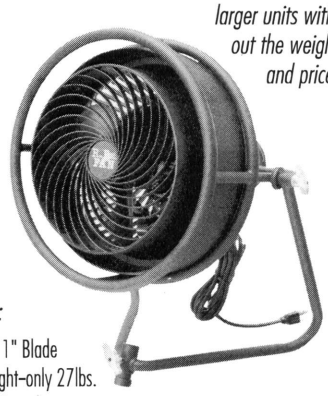

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includes a dimmer control that will vary the output up to 50 percent. The head will ignite in any position on the dimmer. Typical run time for the ENG 200 and 30-volt, 4-AH battery belt can exceed 30 minutes. The light head has an 8:1 spot-to-flood ratio.

Also available from Broadcast Marketing is the Scriptview time code reader, manufactured by Noriyuki Electronics. The Scriptview was designed to mount on the side of any broadcast camcorder with 3 dual lock velcro fasteners. The unit's large 28mm 8-segment liquid crystal display provides great readability of time code numbers from a long distance. This enables the production assistant to make notes of exact time code which is recorded onto the videotape.

A small button on the top of the housing will freeze time code when held. Upon release the time code will automatically return to the current reading. Scriptview will read longitudinal SMPTE/EBU time code from any compatible source without the need to pre-set frame rate. Connection to the time code output source is via a 6" BNC cable. Both the velcro and cable are supplied with the Scriptview.

For information: Broadcast Marketing International, 104 Rowayton Ave., Rowayton, CT 06853, (203) 855-9218, FAX (203) 855-9225.

HDTV Telecine; Graphics System

BTS' FLH 1000 CCD Multi-standard High Definition Telecine, jointly designed and developed by BTS and Eastman Kodak, features innovative digital control and signal processing and provides high-definition 1125/1250 and 525/625 signals, and electronic sizing and repositioning. Excellent results are achieved from the use of camera negative original films. It also provides vivid, sharp and detailed transfer from print, interpositive, and reversal material. Potential film damage is eliminated due to the gentle BTS film transfer continuous motion system.

Also unique is the imaging architecture, a key factor in achieving an excellent signal-to-noise performance. The high-quality CCD sensor, a quad-segment luminance array with 120 MHz effective pixel rate, allows full 30 MHz HD resolution. Compared to flying-spot systems, this CCD sensor provides higher signal-to-noise performance, lower maintenance costs and reliable operation. Scanner noise leves are typically down by better than 60dB, so the film transfer quality is limited by the film itself and not by the machine. High-intensity blue-rich Xenon illumination results in excellent S/N ratios for very dense negative film.

Any common aspect ratio in 16mm, Super 16, 35mm Academy and Full Aperture is scanned within tight and stable tolerances. Dichroic color separation filters are optimized to provide accurate colorimetry.

Variable broadcastable speeds, as well as visible search with full-size color picture, are standard features of the unit. It is also the first CCD line array telecine with a high-speed electromechanical shutter for light control. Digital processing is used throughout the telecine process, from scanning to output.

BTS has also debuted its Video Gallery broadcast-quality television graphics system. Mounted on a Macintosh Quadra platform, the system is preconfigured and pretested by BTS, and features hardware and software from many manufacturers and publishers. Standard features include professional quality 3-D animation, modeling, painting and image retouching, digital layering, character generation, high-speed rendering, and more than a gigabyte of on-board disk storage. Its open architecture design assures long-term use and greater return on investment. Adobe Photoshop 2.5 and Fractal Design Painter 2.0 are standard software packages with every Video Gallery.

For information: BTS, (805) 584-4757, (805) 584-4750.

Effects Software Upgrade

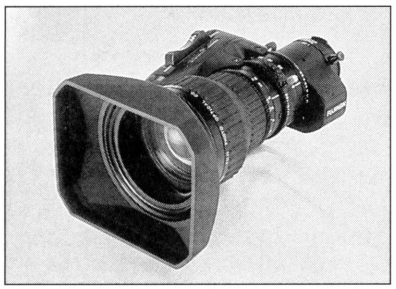
CoSA After Effects 2.0 is an upgrade to CoSA's digital postproduction software package for high-quality compositing, motion graphics, and special effects on the Macintosh. Speed improvements, a comprehensive interface featuring more precise motion control, and enhanced file format support are some of the upgrade's features.

The program provides an all-inclusive time view with its new interface. This comprehensive presentation also offers more precise motion control. For example, users can now edit visible motion paths and key frames in the composition window. The new time layout window replaces three windows with

one, and includes time information for each layer. Displayed in the time layout window are the location and type of each key frame along the timeline. This window shows modifiable graphs of key frame values and velocities, and the timeline is now zoomable and scrollable. Users can also move, cut, copy, and paste key frames. Multiple interpolation methods are available for each parameter, and key frames can actually be split to contain different in/out interpolation methods. All of these features work together to expedite fine-tuning of projects.

New input/output architecture allows the program to support more film formats, including sequence of PICT, Electronic Image IMAGE, Photoshop 2.5 files, and Photoshop 2.5 Image/file format modules.

For information: CoSA, 14 Imperial Place, Suite 203, Providence, RI 02903, (401) 831-2672, FAX (401) 831-2675.



ENG Zoom Lens

Fujinon's A20X8EVM 2/3-inch handheld television zoom lens has a broad zoom range and is small and lightweight. It is well suited for all handheld shooting applications. Like the other members of the V-Grip series of handheld ENG lenses, it utilizes Aspheric Technology (AT) and inner focus, and includes the V-Grip servo and adjustable zoom speed.

The lens weighs 3.9 lbs and has a focal length of 8 to 160mm (16 to 320mm with built-in extender) and a maximum aperture of F1.7 to 115mm and F2.4 to 160mm. Minimum object distance (MOD) is 0.85m (0.4m in macro mode), and maximum photometric aperture (T-number) is T1.8.

For information: (800) 553-6611.

3-D Software Guide

Zelos, a San Francisco-based producer and publisher of interactive CD-ROM titles, has published an interactive buyer's guide to 3-D graphics software.

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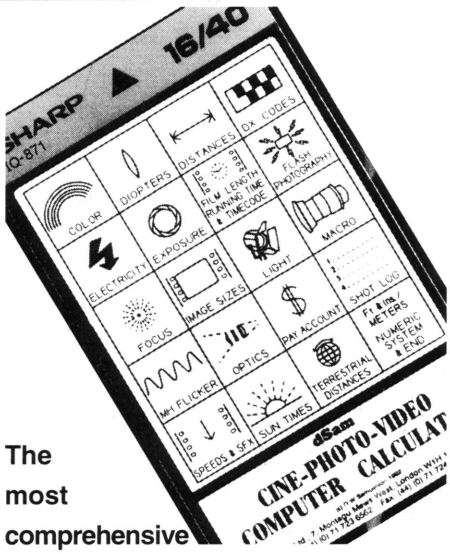

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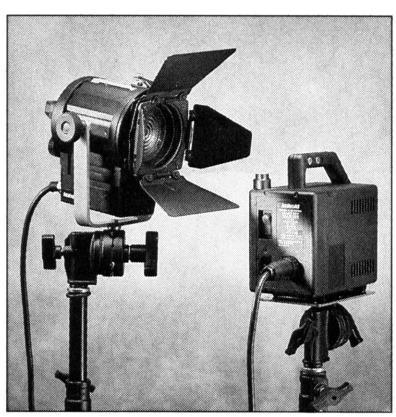
3-D Tutor allows users to test drive 18 leading software modeling and animation packages for the Macintosh, and begins with a tutorial on the fundamentals of 3-D computer design. A Windows version of 3-D Tutor will also be available.

For information: Zelos, (800) 345-6777.

Mic Power Supply

Denecke's dBox PS-1 48-volt Microphone Power Supply is designed as a low-cost auxiliary phantom power supply and features long battery life with a low battery LED indicator. Automatic power off conserves battery life when the microphone is unplugged. The dBox PS-1 features a quick change battery holder. Battery life, using a 9V alkaline battery, is more than 10 hours with a 4mA mic.

For information: Denecke, Inc., 5417 B Cahuenga Blvd., North Hollywood, CA 91601, (800) 866-3525, (818) 766-3525, FAX (818) 766-0269.



HMI Lighting System

Broadcast Marketing's Kobold EFP 400 HMI lighting system is built specifically for the rigors of electronic field and feature production. The EFP 400 open-faced light head has a focusing ratio of 9:1 and an "ignite" button conveniently located on the rear of the fixture. The four-leaf barn door has spring clips for gels and can be attached within seconds. With a total weight of less than six pounds, the light head easily mounts to any stand and can even be suspended from a scissor clamp.

The AC ballast incorporates the latest in "square wave" technology for flicker-free shooting using any shutter speed or frame rate setting. Automatic line voltage switching from 110-230 volts is standard on the ballast. A dimmer control on the unit can vary the lamp head output up to 40%, useful when trying to match base light levels of interior/exterior productions. The kit includes a lamp head with safety glass, stand mount, head to ballast cable, 400W MSR lamp, four-leaf barn door/gel holder, AC ballast, glass diffusion filter and custom travel case.

For information: Broadcast Marketing, 104 Rowayton Ave., Rowayton, CT 06853, (203) 855-9218.

SGI Animation Software

MetaVision's Motion Director, a program for Silicon Graphics workstations, provides tools for 3-D animation, photorealistic rendering, paint effects, and image processing. The program allows users to import and animate 3-D models, add paint effects and texture mapping, choreograph camera movements, create photorealistic rendering of scenes, and output completed animation at almost any resolution to film and video. The program is designed as a cost-effective way to produce animations and renderings using existing models, for those who don't need a full-blown 3-D animation system with its associated expenses and learning curve. The program supports online Bitstream fonts and is a practical tool for creating flying logos and animated titles. Motion Director comes with Imagination, MetaVision's software for imaged editing, image processing and paint effects. Available as an option is CyberProps, a library of more than 150 3-D objects, including indoor furnishings and outdoor fixtures.

General features include a point-and-click interface for all program functions; support of popular interface formats, including AutoCAD, ARRIS, Wavefront and RenderMan; and basic modeling for creating spheres, rectangles, and other geometric shapes.

Animation features include interactive, six-axis motion control for the camera, view reference point, lights, and all objects within a scene; the ability to interactively define an object's time-keyed path onscreen or to place an object on a predefined path; three different camera paths that can be animated — position of camera, view of camera, and twisted camera view; and linking of different objects within an animation. The program also offers simultaneous views of animation paths within multiple win-

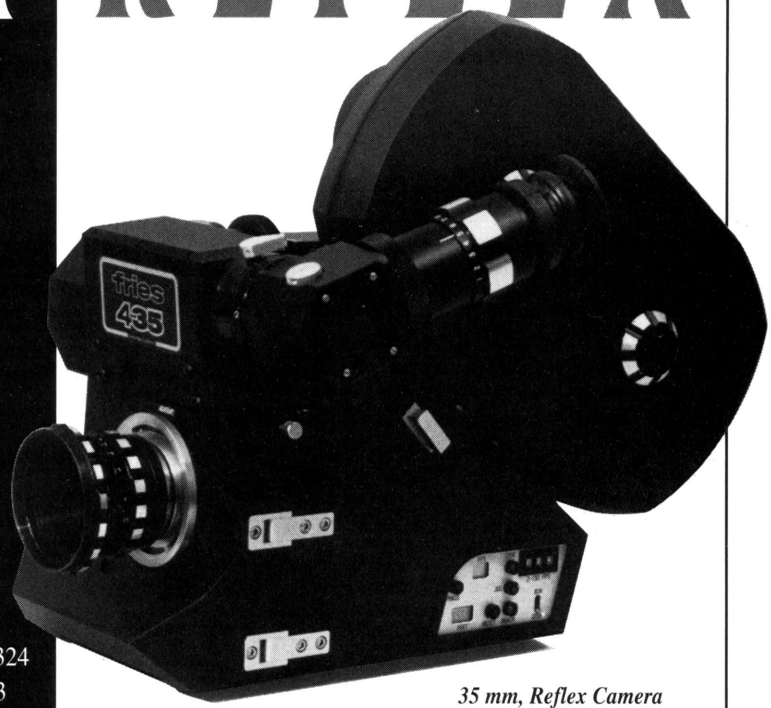
35 MM REFLEX

The Fries model 435 is a new general purpose MOS production 35mm camera. With its optical printer compatible register pins, steadiness and 150 FPS speed. The 435 is ideally suited for special effects, commercials or any photography where a quality steady image is desired.

The 435 is a spinning mirror reflex camera with a 170 degree blanking shutter. The internal 30VDC motor runs the camera from 2 to 150 FPS forward and 2 to 50 FPS reverse, in one frame increments all crystal. The camera is equipped with take-up and supply torque motors.

There are both 1000 ft. and 400 ft. displacement type magazines. A new feature is the light valve which allows the operator to direct all the light to the viewing system, or to the video assist, or combo which splits the light between both viewing and video assist.

Fries Engineering designs and manufactures special effects cameras and conversions in 35mm, 65mm and Vistavision including high speed, time lapse and motion control.



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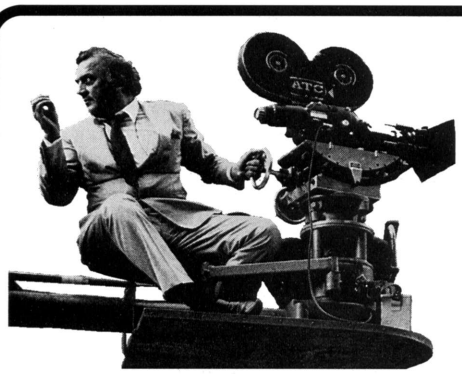

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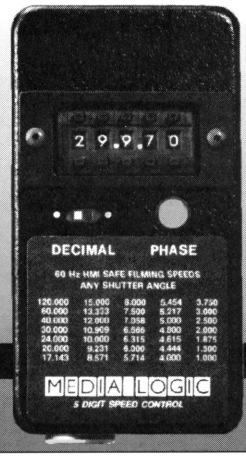

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dows; object deformations, transformations, and morphing transitions along an animation path; and a time curve and sequence editor with preview and playback capabilities.

A scanline renderer offers results close to ray tracing, but without the extra rendering time, and the program's ray-tracing renderer includes features such as texture and bump mapping, soft shadows and motion blur. A wide variety of image formats for importing and applying textures, environments and bump maps is supported, as well as distributed processing for efficient rendering over a network of workstations.

Output features boast automatic control of output devices for unattended animation sequencing to tape or laserdisc; high-resolution output in major video and film formats, including HDTV; and the ability to print through PostScript and other formats.

For information: MetaVision, (919) 829-9205.

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Lightline Electronics Co. recently introduced a new optical frequency meter, the CineSpeedMeter 1. Highly integrated in its design, the CineSpeedMeter 1 employs a crystal-accurate microprocessor for the measurement of line frequency by reading the output of any infra-red-emitting light source. It is capable of reading tungsten as well as HMIs, and any frequency between 8 Hz and 160 Hz. Unlike other frequency meters, the CineSpeedMeter 1 uses a "non-averaging" method to measure frequency. Instead of counting cycles over a reference time frame and then using that information to calculate the average frequency (a varying frequency will often average out to the correct frequency), the CineSpeedMeter 1 samples one cycle at a time and bases its reading on that cycle measurement, thereby revealing any frequency variation.

The meter's low power and single "AA" battery design allows users to go for months without stopping at the sound cart for fresh batteries. A backlit liquid crystal display ensures a clear, bright readout under any ambient light condition. Packaged in a rugged, pager-sized housing that measures only 2.2" X 2.8", it includes a protective belt pouch.

For more information, contact Bob Wright at Lightline Electronics, (503) 246-5835.

A Top Agent Assesses New York's TV Industry

by Brooke Comer

New York's TV industry has one of its staunchest supporters in Adam Berkowitz, a vice president at the William Morris Agency in New York. Most New York agencies focus on theatre, film and publishing; since most television programming is conceived and shot on the West Coast, there aren't many TV agents in New York. Berkowitz is one of the loyal few. He insists that while New York may lack the key players required to get TV shows off the ground, "there's no shortage of talent here."

Finding and developing new talent is Berkowitz' way of helping New York's production community to evolve and regain its former momentum. He's not the only William Morris agent interested in bettering New York's production climate. Jaynne Keyes, formerly of the New York City Film Office, became a William Morris agent before leaving the agency to form Barenholtz-Keyes Productions with distributor-turned-producer Ben Barenholtz. Like Berkowitz, Keyes has a keen interest in discovering and developing fresh talent. Talent is New York's strong point, and while the main market for that talent currently thrives in Los Angeles, the base of marketable producer/directors in New York can only strengthen its credibility as an industry.

Berkowitz is unique among agents. "Most people in my business aren't really interested in finding new talent," he points out. "They're more interested in finding talent when it's already hot." But he makes a point of scouring local theatre, comedy clubs and cable shows. (Alan Kirschenbaum, co-executive producer of *Coach*, was doing a show on ESPN when Berkowitz found him.)

Berkowitz prefers to find his clientele early on and then cultivate their careers. His theory of nurturing talent from its nascent stage comes straight from the William Morris Agency's practice of promoting from within. Berkowitz was a mailroom clerk who worked his way up the ladder while earning a law degree at night school. Now he's become an East-West liaison, responsible for finding marketable talent in New York and selling that talent to L.A.

Berkowitz would like to see New York's television industry come into its own again. He has reason to be optimistic. After all, more original programming is being generated by New York-based cable companies, and regional production around the country is up, with Viacom's police drama *Loralei Lee* filming in Nashville and *The Road Home* shooting in Wilmington, North Carolina, both for CBS.

New York could, Berkowitz believes, regain its former status as a major production community, but only if certain steps are taken. "It's essential to show Hollywood that it's not more expensive or difficult to shoot here," Berkowitz points out. "There are myths that Manhattan is tough to work in because it's not Hollywood, because it's a different system. But look at *Law and Order*. The secret is knowing how to work within that system. It's definitely feasible, assuming that the Union and the below-the-line costs are in line, and if more shooting stages are built."

More shooting stages are already up at Chelsea Piers, where *The Cosby Mysteries* will shoot 13 episodes in six months, while occupying 50,000 feet of sound stages, plus support space. Chelsea Piers also houses *Law And Order*, whose producer, Jeff Hayes, is rumored to be talking about bringing in another series. When *NYPD Blue* was considering a move to New York, Chelsea Piers was a prime consideration. The series opted to stay in California for the time being, which means that the Pier has space for two more series besides *Cosby* and *Law*. Now known as the

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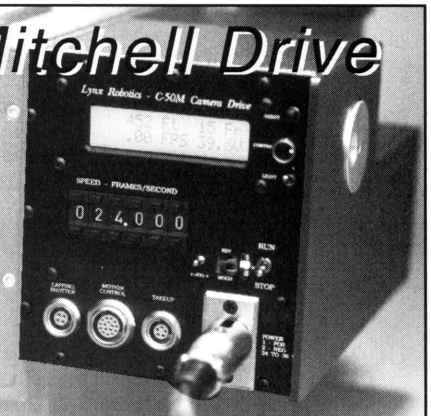

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biggest facility in Manhattan, the Pier offers support services like wardrobe, carpentry, and scenic design right on the premises.

A $50 million renovation will draw more attention to the Chelsea Piers, and will also bring in two Olympic-size skating rinks and Manhattan's largest health club, as well as possible productions. Berkowitz sees this investment in New York's production future as a good sign: "Producers say they won't work here because it costs too much and it's too difficult," he explains. "They're also afraid: in Los Angeles, a producer has control on a day-to-day basis. To be so far away from a big-budget project can be frightening."

Cable, Berkowitz notes, is going to be a boon for New York production. "Now that the cable companies are creating their own original programming, like Jon Stewart's show on MTV, we'll see more production coming back to New York facilities. Nickelodeon produces shows in Orlando and Canada, and it remains to be seen what will be physically produced in New York. Lifetime," he adds, "will do a woman's talk show here."

Berkowitz' New York clientele include *Murphy Brown* executive producer John Bowman and *Larry Sanders Show* exec producer Peter Tolan, who, despite their roots in New York, went West, "which unfortunately is still where you have to go to sell the vehicle, even though the talent is here," says Berkowitz, who describes himself as a conduit between the talent, the producers and the network.

What does it take to sell a series these days? "Execution is more important than ideas in TV and ideas count for less than they did in the old days," he notes. "When that many thousands of dollars are concerned, they're looking for someone who's an experienced show runner to run it and get it on the air without going over budget." While these kind of criteria may prevent New York from getting more TV series in the immediate future, Berkowitz is an optimist. "There's nothing I want more than for New York to succeed as a production community. That's why I'm interested in discovering new talents and helping them succeed. Because what's good for New York is good for all of us."

Books in Review

by George Turner

Films by Genre
by Daniel Lopez
MacFarland, cloth,
495 pps., $45

Again the subtitle — "775 Categories, Styles, Trends and Movements Defined, with a Filmography for Each" — correctly sums up the substance. Humankind, whatever the environmentalists may claim, is neater and better organized than most other beasts. We hanker to shove things into pigeonholes, line them up, tie tags to their toes. Movies are especially vulnerable, being classified according to width, length, MPAA rating, silent or sound, color or black & white, major or minor, domestic or foreign, good or bad, etc. And, rightly or wrongly, we insist on imposing genre labels.

The writer, who lives in Greensborough, Australia, begins his genre list with A-Picture and ends it with Zombie Movie. In between are 773 listings that include all the standard stuff (Adventure, Horror, Mystery, Slapstick, Western, etc.) plus some that may have eluded many of us (Gadget Comedy, Minimal Film, Nonlinear Film, Peplum, etc.) Origins and examples are given in each instance and a lot of interesting film history is revealed in the telling.

It's a remarkable piece of work, although the subject might not be high on your "need to know" list.

Joan Fontaine:
A Bio-Bibliography
by Marsha Lynn Beeman
Greenwood, cloth,
360 pps., $59.95

This is the 50th of Greenwood's Bio-Bibliographies in the Performing Arts books, which have proved to be of great value to researchers and collectors. It contains a wealth of material about Joan Fontaine's life and career, including biographical notes; a filmography (including short films and guest shots); stage, radio and television performances; a discography; and an exhaustive bibliography that tells the Fontaine fan where to find almost everything that has ever been published about her in books and magazines.

Anybody who writes makes mistakes, but usually a sympathetic editor comes to the rescue. In this instance one suspects the editor was snoozing through such gaffes as: "Olivia and Fontaine could not bare to look at each other," ". . . to all intensive purposes," and "*[Frenchman's Creek]* produced an unforgettable score by Victor Young, whose song 'Clair de Lune,' sung by Claude Debussy, brought tears to the eyes."

Film Quotations
by Robert A. Nowlan
and Gwendolyn W. Nowlan
MacFarland, cloth,
745 pps., $75

The subtitle of this fat book tells all: "11,000 Lines Spoken on Screen, Arranged by Subject, and Indexed." In each instance the speaker, the person spoken to, the title of the film and the context of the words are indicated. Due to the multiplicity of authorship of movies, no attempt is made to attribute the writers in the excerpts, but writing credits are listed in the title index. Typical entries:

674 "Oh, no, it wasn't the airplanes. It was beauty killed the beast." **Robert Armstrong** insists that the giant ape's death was a direct result of his concern for Fay Wray. The airplanes which shot him down from the top of the Empire State Building were merely instruments of his execution. *King Kong* (1933, RKO).

1272 "Did I say killer? I meant champion. I get my boxing terms mixed." **George Sanders** makes no mistake in calling scheming Anne Baxter a killer. *All About Eve* (1950, 20th Century-Fox).

The entries are divided into 900 categories, ranging from Abilities

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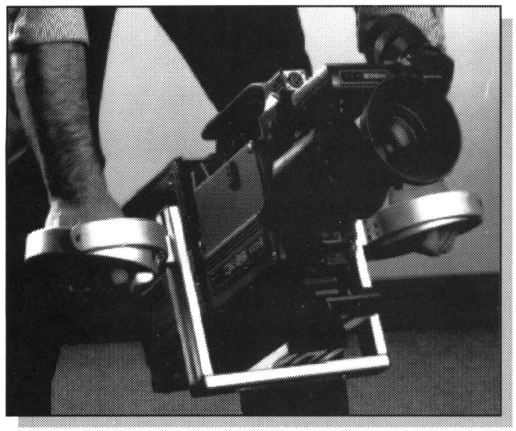

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and Capabilities to Youth. The movies represented are many (the index of titles runs to 57 three-column pages). Most are talkies (a few title cards from silents are included) and they aren't necessarily the big star shows. Charlie Chan, Count Zaroff, Bulldog Drummond and Boston Blackie are happily represented alongside the expected Scarlett O'Hara, Charles Foster Kane, Rooster Cogburn and Sam Spade.

Needless to say, it's a pleasure to shuffle through these memorable snippets — hard to reach a stopping place, in fact.

Clay Animation
by Michael Frierson
Twayne, 278 pps.,
cloth $29.95, pb $18.95

Animation in clay has always taken a back seat to traditional cel animation, but the technique is almost as old as the movies and has brought forth some stunning work. This first book on the subject is by a producer of clay animation films. Using the 1902 *Fun in a Bakery Shop* as a starting point, he reports on the work of early sculptor-animators in the silent era. Highlights include *The Sculptor's Nightmare* (1908) by Billy Bitzer and an unknown sculptor, Willie Hopkins' 54 or more episodes of "Miracles in Mud" for *Universal Screen Magazine,* and the pioneering work of J. Stuart Blackton, Max and Dave Fleischer, Helena Smith Dayton and Virginia May. (Aside to author: you're right about that error regarding *The Dinosaur and the Missing Link* in the book *The Making of King Kong* by Goldner and Turner, but "Oliver" Goldner's friends called him Orville.)

There was little more until Art Clokey's *Gumby* hit TV in 1956. In 1974, *Closed Mondays,* a short by Will Vinton and Bob Gardiner, won an Academy Award. *Sundae in New York* (1984) by Jimmy Picker, Nick Parks' *Creature Comforts* (1990) and Joan Gratz's *Mona Lisa Descending a Staircase* (1993) have also won Oscars. Vinton remains dominant in the field, having produced the first clay feature, *The Adventures of Mark Twain* (1985), as well as the delightful California Raisins TV commercials and many other achievements.

Clay animation is a small part of a big industry, but a fascinating one which is well served in this book.

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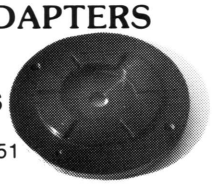

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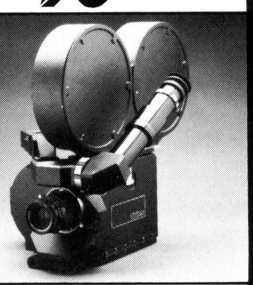

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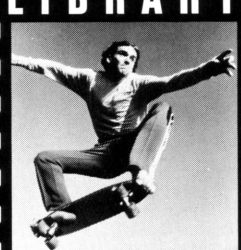

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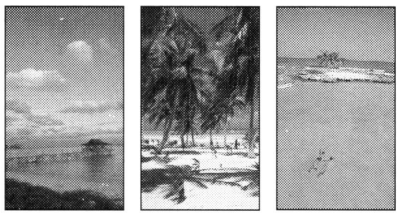

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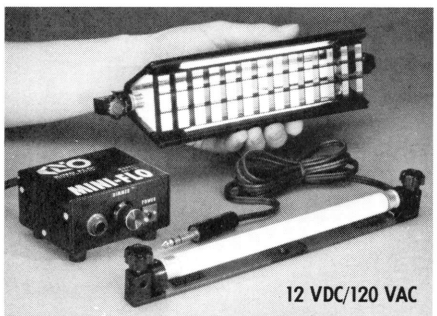

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From the Clubhouse

Vincent Carabello, President of the Hollywood Film Company, has been named an Associate Member of the ASC. In 1967 he joined the Plastic Reel Corporation in New Jersey, where he became sales manager before leaving in 1971 to join Agfa Gevaert. In 1978 he left that company as Eastern Regional Manager to rejoin Plastic Reel as Executive Vice President and relocate to the Hollywood office. In 1991 he joined the Hollywood Film Company in his present position. He is currently a member of SMPTE, BKSTS, ACE, and ACVL.

Also entering into the ASC ranks is new Active Member Robert "Bobby" Byrne, who started out his career as an animation cameraman. After becoming a first assistant cameraman, he worked with Conrad Hall, ASC on *The Professionals* and William Fraker, ASC on ten features, including *Paint Your Wagon*. Fraker promoted him to camera operator on *Monte Walsh*, after which Byrne operated on 22 feature films before becoming a director of photography in 1976. His feature credits include *This Is My Life*, *Sixteen Candles*, *Bull Durham*, *Paternity*, *Hooper*, *Smokey and the Bandit*, *Blue Collar*, *California Dreaming*, *The Lemon Sisters*, *Chilly Scenes of Winter*, and *Stealing Home*. Additional photography credits include *Divine Madness*, *Psycho III*, *Ordinary People*, *Shattered*, and *Breathless*.

Byrne's television credits include the movies of the week *Copacabana*, *Kicks*, and Joyce Chopra's *Danger of Love*, the Fox pilot *The Wyatts*, and the series *B.L. Stryker*.

He has also worked on 42 music videos — among them videos for Neil Young, Janet Jackson, Rod Stewart, and Billy Idol — and has approximately 150 commercial credits to his name, including spots for Eastman Kodak, Bullock's, Dodge, Coors, Carl's Jr., Coke, and Chevrolet.

❧ ❧ ❧

On May 25, the Liberty Hill Foundation presented Haskell Wexler, ASC with its 12th annual Upton Sinclair Award at a dinner in his honor at the Beverly Hilton. The foundation honored his unwavering support of justice, informed international perspective, and ability to integrate his political concerns in his 40 years as a cinematographer, director, and documentarian.

Liberty Hill has served for 17 years as a bridge between the progressive entertainment community and grassroots groups, distributing three million dollars to the kinds of organizations that cannot satisfy the guidelines of more traditional funding sources due to their more politically charged agenda. The money raised at the Upton Sinclair Award Dinner provides the backbone for the foundation's grant-making in the coming year.

Past award recipients include John Singleton, Bonnie Raitt, Jane Fonda, Oliver Stone, journalists at the L.A. Weekly, Edward James Olmos, Harry Belafonte, Martin Ritt, Ed Asner, Hannah Weinstein and Mike Farrell.

Liberty Hill also presented their Founders Awards to Dr. Jay Gordon and Meyers Robbins, who are at the forefront of a campaign to oppose the marketing of alcohol and tobacco products to children, and to Miya Iwataki, an activist for the Asian Pacific community. Guests were treated to a retrospective of film clips from Wexler's features and documentaries.

For more information on the Liberty Hill Foundation, call (310) 458-1450.

❧ ❧ ❧

Linwood Dunn, ASC — along with Richard Jewell, an RKO historian and professor at USC, and director Robert Wise — will serve as judges in a competition among production houses for the design of the new RKO logo. Dunn photographed and composited the elements of the original trademark. The new logo's first appearance will be in the remake of the 1946 RKO classic *Bedlam*, which starred Boris Karloff. ❧

Artists' Rights and Social Conscience

by Haskell Wexler, ASC

I recently served as the ASC representative on a panel discussing Artists' Rights. As a director of photography, I expressed my concern that certain technological manipulations often result in materially altering visuals which appear as mine. If we have a credit, it should not be a discredit. I gave what some thought was a faint plea for truth in advertising.

My restrained enthusiasm for the Artists Rights' position stems from the complications and realities of how films are made and marketed.

Yes, we are directors of photography, and as egotistical as we often are, there is no denying that our work is collaborative. Almost everyone contributes to the artistry of film — a good art director, editor, painter, grip or gaffer. But before we are hired, some person, not normally considered creative, decides which script is a go and who the director and principal players will be. Of course, the writer is the first in the creative process. What we photograph is interdependent with how we photograph. The argument for Artists' Rights is a defensive claim for authorship by the principal artistic authors of a film. I support this struggle.

I encourage all directors of photography to learn all the techniques of imaging and to be the master of those images which appear under their credits.

However, the dollar aspects of making a product work against us being significantly engaged or responsible for images presented as ours. Other people with other machines, not all called cameras, are in the chain that creates our images, our movies. Now, some of us supervise the timing and tape transfers. It is a question of how much we as cinematographers learn about what [possibly can] be done to our work, and a question of how long and to what extent we can maintain influence over our vision. I think I know the answer: What can and will be done to our photography will take it farther from what we used to do. Call it distortion, manipulation or enhancement, but somebody is going to monkey, seriously, with the first picture. This is not always bad.

Even before the onslaught of new technology, other artists improved our work. Creative timers, editors, composers and visual directors have often improved my work. Claiming unequivocal authorship is a tough call.

The corporations which put up the money for films believe they are making a product. They function like advertising agencies, with surveys and test screenings — all the sophisticated marketing techniques used to sell deodorants and politicians. For their trouble and financial risk, they expect to sell the product profitably in whatever format, length or color they desire.

Artists' Rights are sometimes called Moral Rights. Some of our writers and directors have said, "We expect business to act ethically, just as we expect individuals to." The Film Disclosure Act uses the term "commercial morality." Regardless of the fact that the heads of most of the studios are personally intelligent, sensitive individuals, the responsibilities of their positions lead them to embrace *commerciality* and leave morality to the Sunday schools.

As cinematographers, we must recognize that a serious problem of moral and human rights exists. Beyond (or perhaps an integral part of) the esoteric ideas on artistic recognition are the rights to a decent wage, health and welfare, civilized hours and safe working conditions. All below-the-line people are faced with a corporate onslaught of take-it-or-leave-it ultimatums. The attitude is, "We'll shoot in North Carolina, Texas, Canada — we'll go wherever we can to exploit a cheaper work force." Since the unions have lost control of the work force and are obliged to sacrifice past benefits piece by piece to low-budget, deal-by-deal pictures, we see them cutting off an arm here, or a leg there, to save the work.

Producers plead poverty, yet entertainment profits are at an all-time high. Studio executives take down multimillion dollar salaries with stock options. The perks alone would fund many productions. And how many producers were on your last show?

"Well," you may say, "we are artists, we love what we do and no matter what the economics, we want to shoot." Producers capitalize on this vulnerability. Coupled with a low opinion of audience visual sensibility and the overriding incentive to profit, producers do all they can to marginalize the workforce. Make no mistake about it, below-the-line is expendable and replaceable in today's market.

As cinematographers, we are vitally interested in how we shoot, what we shoot and how we are perceived by those who employ us. Our stature and our position in the filmmaking process depends on joining our interests with the well-being of writers, directors, actors and others. We believe in Artists' Rights and Human Rights. We scorn elitism. Until all film workers are treated fairly, no one's rights are secure. True artists have a social conscience. We cannot depend on commercial morality for positive change.

The opinions expressed in this column are those of the author, and do not necessarily reflect the views of the ASC or American Cinematographer *magazine. This column is intended as a sounding-board.* AC *encourages readers to respond to the issues raised. — Ed.*

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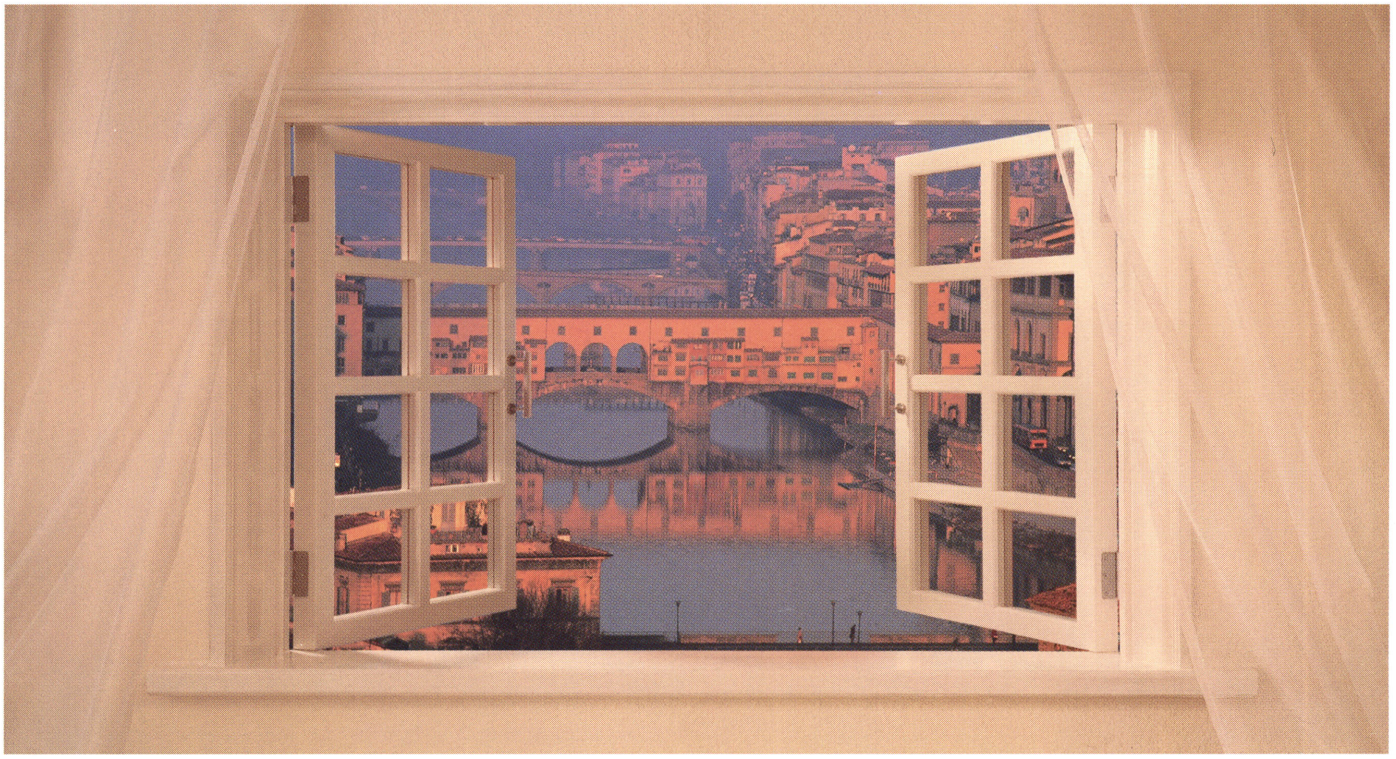

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